VACCINES AND FEVER.

BY

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In the great majority of infective diseases accompanied by marked systemic disturbance the most prominent clinical feature is that form of intoxication which is expressed in fever. The relationship of fever to general infection is so constant that whenever continued fever occurs we may be almost certain that an infective process is at work. Continued fever is in fact an index both of the continued activity of micro-organisms pathogenic to the individual infected and of the absence of effective protection against such activity. On the other hand, the absence of fever does not necessarily indicate the absence of infection. On the contrary, it is a familiar experience that in severe infections leading to a fatal issue there may be no fever on account of grave impairment of the reactive functions of the infected body. This impairment may exist prior to infection or may be the expression of extreme intoxication after infection has occurred. This observation can be verified with great ease. We have therefore learnt to recognize that whilst the continuance of fever is an excellent indicator of the continuance of infection and of the absence of effective immunity thereto, it is also an index that the power of reaction—whatever that may prove exactly to mean—is not yet lost. Now the power of reaction to infection in terms of fever is in some unknown way intimately associated with the complex problems presented by immunity. And we have some reason to believe that the mere presence of continued fever is a sure sign that the machinery of immunization has been set in motion and is still running. The solution therefore of the mystery that surrounds the nature and source of the substances that are the immediate cause of the fever of infective disease can hardly fail to throw light on many of those problems in immunity production which are at present totally obscure.

Hence determination of the essential cause of the fever of infective disease—from the pathological standpoint as opposed to that of physiology—is a matter of immediate concern to all students of immunity. And, as I shall show, this particularly applies to those who administer dead bacterial vaccines, whether for purposes of prophylaxis or of treatment, as well as to those who make use of bacterial emulsions in test tube reactions.

In all immunity problems, whether of the test tube or the living body, the keystone on which all inquiry rests has long been recognized to be the antigen, or substance that provokes the manifestation of antibodies. Similarly in the pathological problems presented by fever inquiry must always start from the pyrogen, or substance that provokes the manifestation of fever.

The antigens, then, and pyrogens of infective disease are substances so vital to the production of immunity and of fever that precise knowledge of their true source, as well as of their chemico-physical nature, must always be a necessary preliminary to an intelligible conception of how they act.

It is widely believed, largely in consequence of Pfeiffer's early work, that the main source of supply of both antigen and pyrogen in infective disease is dissolved bacterial protoplasm. In an infected subject the primary source of supply of these substances is therefore, we are taught, one foreign to that subject, whether the agents affecting their liberation be of an autolytic or heterolytic character. Moreover, since antigen and pyrogen are supposed to be genuine derivatives of bacterial protoplasm in solution, the theory lays down that it is only dead organisms that can supply them. The living bacterium as such has, we must infer—if we accept the theory—no antigenic or pyrogenetic values. Its potential worth, in terms of the production of antibodies and of fever, only becomes kinetic when bacterial death followed by bacterial solution and absorption has occurred.

So far as antigen is concerned, the theory that it is derived from dead bacterial protoplasm has in the main been accepted without question for many years. And incidentally it is the bedrock of that form of vaccine-therapy—the use of dead vaccines—which is under trial in this country to-day. So far as fever is concerned, the theory that the pyrogen of infective disease is a derivative of dead bacterial protoplasm in solution has also, as a rule, been accepted without serious question till comparatively recent date.[1]

In consequence of the general acceptance of this hypothesis as to the source of antigen and pyrogen in infective disease it might reasonably be supposed that it rests on a sound experimental basis. Whether this supposition be well grounded in the case of antigen is a question that cannot be discussed here. In the case, however, of pyrogen I shall show that the evidence hitherto relied on in favour of the view that it is a genuine derivative of dead bacterial protoplasm can no longer be accepted. On the contrary, I shall cite experimental data which suggest—if they do not conclusively prove—that the fever of infective disease is the direct result of absorption of pyrogen derived from the medium offered by the tissues of the infected host in consequence of the activity of the living organism or its products on such medium. And as a corollary I shall indicate the practical bearing of this displacement of current theory on the administration of dead vaccines for prophylactic or therapeutic purposes, as well as on all such test-tube experiments as involve the use of bacterial emulsions of the same nature.

The experimental basis of the theory that dead bacterial protoplasm is the direct source of the fever of infective disease is the undoubted fact that fever does frequently follow the injection into healthy subjects of dead cultures of certain organisms. At first sight this evidence would seem to be conclusive, especially if fever were found to follow the injection of all known forms of dead pathogenic bacteria and protozoa. It has, however, for some years been recognized that there are exceptions to what is by many still believed to be a general rule. For example, injection of dead cultures of the bacillus of Koch, *B. anthracis* and *B. diphtheriae* into healthy subjects has from time to time been found not to be followed by fever. In the case of the bacillus of Koch it was believed that the "waxy envelope" prevented bacterial solution and consequent extraction of the pyrogen with which this organism was credited. In the case of *B. anthracis* and *B. diphtheriae*, however, no explanation was forthcoming as to the absence of fever after injection of the killed organism. Nevertheless, these exceptions were looked upon as unimportant, and were to a great extent forgotten. When the practice of administering dead bacterial vaccines became general it was soon found that their injection might give rise to mild forms of intoxication, including fever. Prophylactic injections into healthy subjects of dead vaccines of *B. typhosus* are a case in point. Belief in dead bacteria as the primary source of pyrogen became therefore more firmly rooted than ever, though again no explanation was given—beyond a quantitative one—of the frequent experience that fever did not follow, for example, injections of certain staphylococcal vaccines. The subject, in fact, does not seem to have been investigated.

Early in 1911, therefore, I examined, with the aid of my laboratory colleague, Dr. Penfold, a large number of dead and living bacterial vaccines by injecting them, for the most part intravenously, into healthy rabbits. The organisms examined in respect of their pyrogenetic properties are given in the subjoined list. They are divided into two groups, according to whether they did or did not on intravenous injection produce immediate fever if the organisms were first killed. The character of the list given is, I think, sufficient answer to the very reasonable suggestion that the absence of immediate fever after injection of an emulsion of organisms might be due to difficulty of lysis of the particular organism. In all cases the vaccines injected were made from laboratory cultures. Many different strains of several of the organisms were examined, an important point, as will be seen, in the study of the relative pyrogenetic properties of any bacterial emulsion. Attention is drawn to the fact that the list of the organisms from laboratory cultures which did produce fever is a list also of Gram-negative organisms. On the other hand, the list of organisms injection of which did not

* The protocols for many of the experiments referred to in this paper have already been published. In most of the experiments detailed in such protocols I was aided by Dr. W. J. Penfold. Full data of the additional experiments referred to in this paper will be published elsewhere, and for these I accept sole responsibility.

produce fever is a list also of Gram-positive organisms. The parallelism is a striking one, though its interpretation is at present obscure.

Pyrogenetic Vaccines.	Apyrogenetic Vaccines.
B. typhosus.	*B. diphtheriae.*
B. coli.	*B. anthracis*
B. influenzae.	Koch's bacillus.
B. pestis.	*B. mallei.*
B. melitensis.	Streptococcus.
M. catarrhalis.	Pneumococcus.
V. cholerae.	*Staphylococcus aureus* (certain strains).
Acne bacillus.	(Tuberculin.)
S. albus (certain strains).	(Mallein.)
S. citreus (certain strains).	
S. aureus (certain strains).	

Clearly, then, the list of organisms that apparently do not contain any pyrogenetic substances is much longer than has previously been realized. And no doubt further examination will reveal yet other laboratory-grown organisms injection of which does not produce fever if they have been first killed. So far I have not examined for the presence or absence of pyrogenetic function such protozoa as can be grown on laboratory media. It should also be noted that repeated injection at suitable intervals into the same animal of a dead vaccine of the apyrogenetic type does not produce fever. This observation seriously affects the question of anaphylactic fever in the sense employed by Continental observers. We have gone more fully into this subject in a paper read at Liverpool in the summer of 1912.[2]

In the face of the experiments referred to here,[3] it must be admitted that if some laboratory-grown organisms appear to contain a protoplasmic pyrogen—because they produce immediate fever when injected dead—it is difficult to understand why so many others do not.

In further experiments, however, published[4] in the autumn of 1912, we showed that certain strains of organisms which after growth on agar are primarily apyrogenetic when injected dead appear to acquire pyrogenetic properties if subcultivation on fresh agar is carried out. For example, some subcultured strains of *S. aureus* readily exhibit the power of provoking fever if the heated organisms be injected. This is particularly the case if animal passage has taken place before subcultivation, the rabbit being selected as the medium of passage. In other words, subcultivation on laboratory media, especially if preceded by passage, appears to select out a race of organisms trained to extract from the culture medium a pyrogen that the original strain either could not extract or had become incapable of extracting. Control observations showed that the uninoculated media used produced no fever in the case both of agar and of broth. The suggestion therefore arises that when the subcultivated heated organism is injected pyrogen extracted or synthetized from the medium by the action of the living organism is unavoidably injected at the same time. It is possible, therefore, that the pyrogenetic properties of all those organisms injection of which when dead produces fever are in reality due not to the possession of pyrogenetic properties of their own, but to adsorption of something elaborated by the action of the living organism on the medium of growth. As will be seen, it has so far not been possible to detach completely this substance from organisms that have picked it up, possibly owing to its inclusion in interstices in the bacterial wall. Adsorption on the free surface of the bacterial wall appears not to prevent partial detachment of this adventitious pyrogen, since its presence can readily be demonstrated in the washings by the fever that follows their injection. If this theory—that the pyrogenetic effect of dead vaccines is due merely to adsorption of some substance manufactured from the medium of growth—is true, we ought to find that an inoculated medium when it has been deprived of its organisms is still pyrogenetic. And experiment proves this to be the case, provided that the centrifuge is used as the means of separation and not the bacterial filter.

A large number of observations have from time to time been made on the toxicity of bacterial filtrates expressed in fever.[5] And numerous observers have shown that many filtrates are practically non-toxic and produce no fever. At the same time it was shown that the heated material held up by the filter was often in these cases found to be strongly pyrogenetic as well as the heated unfiltered cultures. These findings naturally gave additional support to the view that the fever of infectious disease was caused by dead bacterial protoplasm. As, however, we showed[6] in 1911 the use of the filter is quite inadmissible in determining the presence or absence of pyrogenetic substances in culture media. And for two reasons. In the first place, it is difficult—if not impossible—to avoid contamination of the filtrates with antipyretic salts derived from the filter itself. Calcium salts, for example, were, we showed, traceable in the filtrate even after repeated passage of freshly distilled water. And calcium salts have been shown by many observers to inhibit fever. In the second place, although in view of our observation that pyrogen appears to be a body of small molecule[7] there is no guarantee that filtration of a colloidal liquid containing bodies of small molecule as well as of larger molecule, such as bacteria, will allow the filter to hold back the large and let through the small. On the contrary, larger bodies must tend to block the filter and prevent to an undetermined extent passage of the smaller.

Furthermore, apart from the question of filtration, if we wish to demonstrate the presence or absence of pyrogen by injection, it is always necessary to be sure that a sufficient volume of pure water is used as the diluent or vehicle of injection. This is necessary because increase of the volume of the diluent increases the amount of fever produced by injection of pyrogen, whilst injection of the same quantity of pyrogen in a smaller volume of diluent may produce no appreciable effect. Again, if normal saline be used as diluent instead of water, injection of one animal may produce high fever, whilst injection of a second animal of the same weight with the same quantity of pyrogen in the same quantity of saline may produce none. Experiments[8] dealing fully with all these points we have published elsewhere, though at present it is not possible to explain them. All observations, therefore, that deal with the pyrogenetic properties of bacteria, or of emulsions of bacteria, must be regarded as suspect (*a*) if the filter is used, (*b*) if saline be employed as the diluent, (*c*) if the relation of the volume of pure water and of the quantity of pyrogen containing material to body weight be not clearly stated, (*d*) if the water used for injection be not freshly distilled each day and used at once. The numerous fallacies introduced into the study of fever by absence of knowledge as to the necessity for this last precaution we have fully dealt with in other papers.[2 3 4 7] Here it will be sufficient to point out that the experimental evidence hitherto relied on in favour of the existence of such distinct entities of fever as water fever, salt fever, salvarsan fever, lactose fever, glucose fever, saccharose fever, protein fever, nuclein fever, tissue fever, fibrin ferment fever, serum fever, blood cell fever, haemolytic fever, transfusion fever, and anaphylactic fever no longer exists, since we have reproduced fever charts typical of all of these by injecting pyrogen-containing water alone, whilst the injection of each of these substances in pure water produced no fever.

Hence the only satisfactory method of determining by injection if an infected culture medium, after separation of the infecting organisms, is or is not toxic in the sense of producing fever is to use an efficient centrifuge and to employ as diluent freshly-distilled water in constant and stated volume. When these precautions are taken, the reputed atoxicity of many organism-free culture media that have been submitted to infection entirely disappears. The results of the large number of experiments we have carried out on this subject may be briefly illustrated.

Method of Experiment.

An eighteen-hours culture, for example, of a stock strain of *B. typhosus* on broth is examined in the following ways:

A.—*Unheated.*

1. A measured quantity—sufficiently small not to kill—of the whole broth is injected intravenously in a suitable quantity of water into a healthy rabbit of known weight. Fever rapidly follows, reaching its maximum in two to four hours, and disappearing in six to eight hours. Observations are taken every thirty minutes. Observations taken at much longer intervals than this are useless. The next day and on several successive days observations are again repeatedly taken, but fever does not return within the limits of observation.

2. The centrifuged deposit of an equal quantity of the same culture is repeatedly washed and is then injected in water into a second animal, and observations are taken as before. The results are precisely the same as in the first experiment, allowing for the slight variations in the degree of fever produced as a result of the varying personal equation on the part of the animals injected.

3. The supernatant fluid not injected in Experiment 2 before washing is now injected in water into a third animal. Once more the same essential features are recorded.

B.—*Heated (to 100.0° C.).*

Precisely the same experiments described under A are now repeated with the heated culture, the heated centrifuged and washed organisms, and with the heated supernatant broth. And again the same results are recorded in every case. Examination of the heated supernatant broth shows that no organisms are present.

The heated and unheated centrifuged deposits from a fresh broth culture of the same strain are then washed with a solution of hydrogen peroxide. This procedure entirely removes their pyrogenetic properties, as was shown by injection into several animals. Microscopic examination of stained films of the deposit before and after this treatment reveals no differences. The heated and unheated centrifuged deposits from fresh samples of the culture are repeatedly washed with pure water, and the washings pooled. The washings produce on injection slight fever, the deposits produce high fever which is immediate. The heated and unheated centrifuged deposits from yet other samples of the culture are repeatedly washed with 1.4 per cent. sodium citrate solution in pure water and the washings pooled. These produce more fever than do the water washings. The deposits, however, are still markedly pyrogenetic. Finally, the heated and unheated centrifuged deposits from the remainder of the culture are repeatedly washed with pure ether and the washings again pooled. These are then evaporated in a water bath and the residue taken up in citrate solution and injected. The procedure is followed by high fever. The original deposit of organisms, however, is still somewhat pyrogenetic, possibly because it is not easy to get rid of all the other soluble pyrogen present. Owing to contamination of the bottom and sides of the test tube with the residue of pyrogen left after evaporation of the last remnants of the ether unavoidably left behind in removal of the supernatant fluid this appears to be the probable explanation. Examined by the microscope the ether washed organisms appear intact but moniliform, and they stain badly.

The points brought out by these experiments with ordinary laboratory strains may be thus epitomized:

B. typhosus grown in broth produces, if the heated or unheated organism be injected, an immediate and fugitive fever characterized by a sharp rise and fall. The animal does not become infected after injection of the living organism, and does not show any late fever after injection of either the living or the dead organism. Precisely the same events take place on injection of the culture-medium after separation of the organisms. The pyrogen therefore is present in the separated broth, and in or on the surface of the bacteria. This pyrogen cannot be completely washed away from the organisms, but it can be better detached by citrate solutions than by pure water, and better still by ether. It is, in short, feebly soluble in water, more soluble in citrate solution, and markedly soluble in ether. It cannot therefore, be a protein. It is apparently oxidized by peroxide since washing with this subject renders it inert, and standing for twelve hours in the semi-dry state has the same effect. We find in addition that it is active after incubation with a strong solution of tryptic ferment. Chloroform appears to some extent to inhibit its activity, but it is difficult to determine if this action is reversible owing to the difficulty of accurate determination of relative degrees of fever in the rabbit.

This pyrogen appears to be a preformed pyrogen when injected and to bear in its effects no relation to any known form of infection-fever occurring naturally in man and animals. After the immediate fever has passed off there appear to be no after-effects and there is no secondary fever, and this is also true after injection of the living or dead organism that has been allowed to stand in minimal quantities of water or saline. The pyrogen is, in addition, remarkably heat stable.

Such are some of the characteristics of a pyrogen that has hitherto been believed to be the purely bacterial product of a laboratory-grown organism that is known not to be pathogenic to the rabbit. Clearly, then, *B. typhosus* is not an organism in which it is possible to study natural pyrogen as it occurs in the body. Examination of other strains of *B. typhosus* on broth produced the same results, as also did examination of this organism on agar.

In order, therefore, to determine whether the pyrogen of infective disease is or is not a true bacterial product it is necessary to select for examination an organism that is pathogenic to the rabbit, and which at the same time has not become contaminated by a preformed pyrogen derived from the medium employed in artificial culture.

Certain strains of *S. aureus* satisfactorily meet these conditions. The absence of contamination in such strains is readily proved by injection. If, for example, the heated or unheated agar or broth culture be injected without separation of the organisms from the agar scrapings or broth no immediate fever is produced. The same negative result is obtained if the washed centrifuged organisms, or the supernatant fluid in the case of broth, or the washings in the case of agar, are injected. If, moreover, repeated observations are taken for several days of all the animals injected, it is found that fever only occurs in those which have received the living organism. In these animals, provided that the dose is not large enough to produce early death, or small enough to prevent infection, fever appears in a day or two, and continues till death or recovery takes place. If the virulence of the organism injected has not been reinforced by recent subcultivation, or by subcultivation *plus* animal passage, recovery is the rule. The fever generally begins within twenty-four hours of injection, but the latent period—if avirulent strains have been selected—was well marked in all the numerous cases examined. Here, then, is a very different picture to that produced by injection of *B. typhosus*. The fever set up is late in appearing instead of early, occurs always after injection of a suitable number of the living organisms, and never after injection of the dead; it has a slow instead of a rapid rise, and continues for several days instead of from one to eight hours. Further, it is not provoked by injection of the culture media from which the organisms have been separated, in marked contrast to the result obtained by injection of *B. typhosus* cultures deprived of that organism. The fever curve produced is that of a natural infection instead of one that bears no resemblance thereto. And finally, the substance—enzymic or what not in nature—which in the living organism liberates or synthetizes pyrogen is heat labile, whereas the pyrogen derived from laboratory media is remarkably heat stable.

Nevertheless the experiments so far quoted do not reveal the true source of the pyrogen in actual infections. A laboratory product, of course, natural pyrogen cannot be, as appears to be the case in the artificially produced fever set up by injection of cultures of *B. typhosus* and other members of the same group. Since, therefore, the source of natural pyrogen is not dissolved bacterial protoplasm, it can only be the substrate offered to the living organism by the tissues of the host.

The next step in the solution of the problem, therefore, was to discard laboratory media and to employ, as far as possible, the natural media of the animal body. For this purpose red cells from the blood of healthy rabbits were washed free of plasma with pure solution of sodium citrate, and were at once lysed in freshly distilled water. Samples of this blood-cell extract medium were exposed for one hour to air infection, and were then placed in a sterile flask, which was at once hermetically sealed and then incubated for twelve hours at 37.0° C. At the end of this time a copious growth of a staphylococcus was present, and demonstrated by film preparations from the centrifuged deposit. Control blood cell extract medium prepared at the same time and treated in the same way, with the exception of exposure to air, was found to be sterile. Injections of this control extract were followed by marked depression of temperature. Injections were then made of the infected extract into different animals as follows: (*a*) The heated washed centrifuged organisms; (*b*) the unheated washed organisms; (*c*) the unheated supernatant blood cell extract proved by control inoculations of agar to be free from organisms capable of growth. In each case immediate fever resulted of a precisely similar nature to that obtained by injection of *B. typhosus* cultures or of staphylococcal cultures after subcultivation preceded by passage. The animals injected with the heated organisms or with the supernatant liquid on the other hand failed to show any secondary fever. The animals, however, that were injected with the living organism

exhibited in addition to immediate fever the late continued fever of a natural infection with a much shortened latent period.

From these experiments it is clear that a pyrogen clinically indistinguishable from the pyrogen elaborated from agar or broth can be readily obtained if blood-cell extract be used as the medium. It is also clear that the immediate fever produced after injection of the heated organism or the supernatant fluid or the unheated organism was due to injection of preformed pyrogen—elaborated from the blood extract in the test tube—whilst the late fever produced after injection of the living organism was due to a second pyrogen—elaborated from the circulating blood or other tissues. The fact that the organisms were obtained direct from the air excludes the possibility of transference of any contamination from the ordinary laboratory media. These experiments appear to support the view that an organism that is unable to produce immediate fever dead or alive can do so both dead and alive if the living organism is first able to extract and adsorb from the medium on which it grows a pyrogen elaborated from that medium. We have elsewhere shown that organisms derived from the air, and not allowed to grow on the ordinary laboratory media, produce no immediate fever on injection provided that pyrogen-free water or saline is employed as the vehicle of injection. The pyrogen of blood-cell extract is just as heat stable as is the pyrogen derived from agar or from broth.

Owing to individual variation in the degree of fever produced in rabbits even after injection of constant quantities of pyrogen in constant quantities of water relatively to body weight, it has not been found possible accurately to measure the increase of "test tube pyrogen" from day to day in living cultures. The concentration, however, of "test tube" pyrogen is certainly high after twelve hours' growth, and remains high, in broth cultures, for many weeks. Abstraction of pyrogen taking place spontaneously is, of course, impossible, and no great destruction occurs within reasonable limits of observation. On the other hand, in the living body, during a natural infection we should not expect to find the same conditions. The concentration of pyrogen in the circulating blood of a feverish subject, for example, should be relatively low, since abstraction, if not destruction as well, must continually be going on. We should expect, therefore, to find that in order to produce fever in a healthy animal by injecting blood from a feverish animal it would be necessary to inject large quantities of blood. And on experiment this proves to be the case. For example, I injected into a series of healthy animals varying quantities of a 40 per cent. centrifuged citrated blood plasma from an animal exhibiting the continued fever of an acute genuine infection. The mixture of plasma and 1.4 per cent. citrate solution was centrifuged in order to get rid of any organisms that might be present. Injections up to 5.0 c.cm., equivalent to one four-hundredth of the weight of the animal injected, produced no fever. Injections of 10.0 c.cm. provoked slight rise of temperature, whilst injection of 15.0 c.cm. produced slight but definite fever. Control injections of healthy citrated plasma produced no rise of temperature. Clearly, therefore, the amount of pyrogen circulating in the blood in such case is much less than that contained in blood-cell extract in the test tube, which only requires injection of 0.50 c.cm. of a 25 per cent. extract, from which the organisms have been separated by the centrifuge, to produce high fever. The next step, therefore, was to determine if the injection of heated organisms after recovery from the body of a feverish animal does or does not produce immediate fever. If it were found that injection of such organisms did produce an immediate fever similar to that produced by injection of heated organisms after test tube growth on agar or broth or on blood cell extract, the fact would appear to make demonstration of the true source of pyrogen in infective disease by this method of investigation an almost impossible achievement. If, on the other hand, injection of heated organisms recovered from infected subjects produced no fever whatever the number injected, the theory that dissolved bacterial protoplasm is the primary source of the pyrogen of infective disease would be clearly untenable. Demonstration of this would, in conjunction with the experiments already described, leave no alternative but acceptance of the view that fever is the expression of the activity of living organisms, or their products, in and on the infected body.

Further experiments were therefore carried out (*a*) with organisms recovered from the fixed tissues of infected subjects, including pus, (*b*) with organisms recovered from the blood in subjects of septicaemia.

Recovery of Organisms from Infected Tissues.

Organisms were recovered from infected tissues in the following way:

An unheated laboratory strain of *S. aureus* that produced no immediate fever was injected into a series of healthy rabbits. A late continued fever resulted in all cases. After a week's illness with fever one of the animals was killed, and from the multiple abscesses present in the kidneys large numbers of organisms were heated before injection to 57° C. No fever whatever followed the injection early or late. The experiment was repeated with another animal which was killed at an earlier stage of the infection and the same results were obtained. In another experiment an unheated laboratory strain of a pneumococcus of low virulence was injected into a healthy rabbit. No immediate fever followed injection, but a late fever set in. On the eighth day, the fever still continuing, the animal was killed. An emulsion of splenic pulp, shown by film preparations to contain enormous numbers of organisms, was injected. Again no fever followed injection. In this experiment, as well as in the first series, control cultivations from the kidney and spleen showed that living organisms were present in the material examined, since copious growth was obtained on agar. Injection of the heated and unheated agar organisms produced high immediate fever in every case, and the injections in the case of the living organisms led next day to a fatal issue.

These observations therefore appear to show that organisms recovered from tissues other than the blood, and injected at once, possess no pyrogen, but that when grown on laboratory media they readily elaborate a contaminating pyrogen from such medium, which they subsequently adsorb. They also show that the concentration of body pyrogen cannot be high in the infected organs, since the tissue material injected in some of the cases was considerable in amount. Owing to the difficulty, however, of freeing organisms recovered in this way from tissue débris, their enumeration cannot be satisfactorily carried out. Moreover, it is conceivable that absence of pyrogen in the dead organisms after recovery from the body might be explained by exhaustion of any pyrogen they might have contained whilst in the body during the continuance of fever. The low concentration of pyrogen, however, already demonstrated in the blood plasma during high fever, and the fact that injection of organisms recovered from the body at an earlier stage of an infection shows them also to be pyrogen free, make such a view improbable.

Fresh Human Pus.

Pus was first taken from an abscess believed to be tuberculous in a patient with a temperature of 100° F. In film preparations no organisms could be found. Intravenous injection of small quantities of this pus in water was not followed by fever, early or late, whether heated or unheated. Samples of fresh pus were then taken from several patients with fever, and were examined bacteriologically and by intravenous and subcutaneous injection. Only those specimens were selected for injection which were found to contain large numbers of micro-organisms indicating the presence of recently-formed pus, or of pus from the periphery of abscess sacs. Control cultivations on agar gave in all cases selected copious growth. The organisms injected in different specimens included staphylococci, diplococci, and streptococci. One specimen contained both staphylococci and streptococci. In no case did injection of quantities of heated pus from 0.1 gram in 1 c.cm. of water to 2.50 grams in 2.50 c.cm. of water produce fever early or late. On the other hand, injection of sufficient quantities of unheated pus in this series never failed to produce a continued fever with a much shortened latent period.

These experiments are of interest in view of the numerous observations that have been published to show that injection of pus is constantly followed by fever. Such observations can only be explained by injection of pus in pyrogenetic saline, or by injection only of unheated pus. The experiments here quoted, however, lend additional support to the view that fever can only be produced during a natural infection by the living organism. In the case, however, of pus injections it is again impossible to carry out satisfactory enumeration of the organisms injected, and this method was therefore abandoned.

The only convenient method remaining of determining whether organisms recovered from the body during an infection with fever do or do not produce immediate

fever when injected dead is to obtain them direct from the blood stream in cases of septicaemia. If the circulating blood in septicaemia be received into pure sodium citrate solution and the mixture at once centrifuged, the deposit can, after lysis of the red cells in pure water, be readily examined. Any organisms present can then be counted in the ordinary way. In laboratory experiments, however, as is well known, it is a difficult matter to produce a genuine bacteriaemia, since the injection of organisms after growth on ordinary laboratory media is followed by their rapid disappearance from the blood stream as estimated by ordinary cultivation methods. And the cultivation of serum-fast strains has certain disadvantages. I have, however, overcome these difficulties by growing, for example, a laboratory strain of pneumococcus on the rabbit blood cell extract above described for forty-eight hours. Injection of the living organism from such extract into a healthy rabbit produces an infection with fever that can be demonstrated for some days. And injection of known numbers of organisms recovered from the blood during this fever can be readily carried out. Injection of 3,090 million dead organisms recovered in this way failed to produce any fever early or late, whilst injection of 10.0 c.cm. of a 40 per cent. citrated solution of plasma from the same animal, after removal of any organisms present by the aid of the centrifuge, produced slight but definite rise of temperature, and injection of the living organisms produced a typical continued fever.

Demonstration of the absence of pyrogen in dead bacterial protoplasm of organisms recovered during natural infections appears therefore in the cases examined to be complete. Whether this will prove also to be true of all organisms recovered from infected subjects, including man, is a question that only further study can decide.

In the meanwhile, in view of the cumulative evidence here presented, it is difficult to resist the conclusion that a rising temperature is not—as we have paradoxically been led to believe—a sign of increase of bactericidal and bacteriolytic function, but is on the contrary an expression of the activity of living organisms. Dead organisms, in short, do not in natural infections give rise to fever.

The next question that arises is the practical bearing of these observations on immunity problems in general and in particular on the administration of dead bacterial vaccines in the diagnosis, prevention and treatment of infective disease.

It will, I think, be clear that the non-bacterial pyrogen derived from laboratory media which is so misleading a factor in the experimental study of fever is also one that we cannot afford to ignore in practical medicine.

There are in connexion with prophylactic and therapeutic vaccines two possibilities to be considered. On the one hand contamination of bacterial vaccines with pyrogenetic substances of purely laboratory origin may greatly enhance their prophylactic and therapeutic value. In this connexion the observations made some years ago on the effect of injecting nucleinates are of interest, though they cannot be dealt with here. If comparative experiments with the vaccines at present in use and with detoxicated vaccines prove that the presence of non-bacterial substances is an advantage, steps will have to be taken by subcultivation or in other ways to ensure that all vaccines are toxic. At present some vaccines are toxic in this respect, and some are not. Some of the causes for these differences I have explained. On the other hand, contamination of vaccines with laboratory material may be a distinct disadvantage. If this prove to be the case, vaccines, before they can be justifiably used in man, must first be tested for the absence of medium derivatives by injection of animals with the precautions mentioned, or in some other way. And such vaccines as are found to be toxic must then be rendered atoxic by one or other of the methods given, or by some other method if shown to be more convenient. It will not be forgotten that the injection of contaminated vaccines into healthy subjects for purposes of prophylaxis may be a less serious affair—if disadvantage be proved—than therapeutic injection of subjects already gravely ill. In these the question of dosage will necessarily be a matter of special concern, unless vaccines shown to have been detoxicated, or to be primarily atoxic, are employed.

Of more importance, however, even than the question of the positive good or harm effected by injections of contaminated vaccines is the larger question of to what extent the specific antigenic values of vaccines in general depend on the presence of this contamination. (In passing it may be well to point out that there is some evidence that the toxic substances elaborated from culture media by the action of living organisms on such media are to a certain extent specific to those organisms.*)

In other words this problem presents itself: Have we at present unimpeachable evidence that a pure dead vaccine has any antigenic values in the prophylaxis or treatment of general or local infections? It is worth notice that the vaccines for which the highest protective and therapeutic values are claimed are just those in which the content of laboratory pyrogen is highest. Cases in point are *B. typhosus*, *B. coli*, possibly *B. pestis*, and the acne bacillus. I am not here suggesting that this relation is more than accidental, or that dead vaccines have no specific antigenic values apart from their laboratory contamination. It is obvious, however, that until the point has been fully investigated we are no longer justified in attributing to dead bacterial vaccines antigenic values that may prove to belong—in whole or in part—to substances that are not primarily derived from dead bacterial protoplasm. At present when we employ these vaccines we have no guarantee that any single vaccine provided is a pure vaccine.

In future, therefore, we shall require such guarantee, as well as an assurance that the process of purification has not damaged any genuine antigen the purified vaccine may possess. And in passing it may be well to glance at the question of the so-called autogenous vaccine, which in one important respect is a somewhat misleading name, as I pointed out in 1911. A vaccine made from dead organisms collected from the blood or other tissues of an infected subject and injected without intermediate cultivation on laboratory media is a genuine autogenous vaccine, and its injection in animals appears not to be followed by toxic symptoms, though it remains to be seen if it has any therapeutic effect. A vaccine, however, that is made from organisms collected in the same way, but then cultivated on artificial media and then injected—after death of the organisms has taken place—is not a genuine autogenous vaccine, because, as I have shown, the toxic symptoms that may now arise are due to contamination from the laboratory medium of growth. The organism, in short, has had a new function imposed upon its descendants by such growth, and it is not impossible, therefore, that the increased therapeutic values with which the *soi-disant* autogenous vaccine is credited may prove to be due to this very fact.

It is not stretching the argument too far to point out that it is also necessary in view of the experiments here described to examine afresh the evidence that has hitherto been relied on in favour of the existence of bacterial toxins in general and especially of the so-called endotoxins. The endotoxin of *B. typhosus* is a case in point. In all these cases it will now be necessary before we can postulate the existence of a genuine endotoxin to be sure that the organism selected for purposes of extraction, whatever the method of extraction selected, is first of all deprived of the highly toxic material elaborated from the culture medium. In all experiments so far undertaken with the reputed toxin of *B. typhosus* when cultivated on laboratory media this precaution has for obvious reasons not yet been taken.

Finally comes the question of diagnosis. If, for prophylactic or therapeutic purposes, it is necessary to use pure vaccines, it is equally so in all those test tube reactions in which antigen and antibody are the essential factors. We shall not only have to make certain that only pure vaccines are used for the production of animal immune serums, but we shall also have to ensure that all bacterial emulsions used as diagnostic antigens are equally above reproach. In the case of such organisms as the bacillus of Koch, and of such other members as apparently do not elaborate

* For example, the centrifuged washed organisms of *B. coli* laboratory cultures cannot be deprived of their pyrogenetic properties by washing with hydrogen peroxide. This fact appears therefore to indicate that the living *B. coli* elaborates from its culture medium a pyrogen of a different nature to that elaborated by the living *B. typhosus*. Moreover, *B. coli* is able to synthetize a pyrogen from protein-free media which before inoculation with the living organism are apyrogenetic.

this contamination from culture media these precautions may prove unnecessary. On the other hand, in the case of all those organisms which we have shown to be characterized by their ability in the living state to elaborate toxic derivatives from the media of artificial growth, these precautions cannot be neglected.

In conclusion, although it is premature to indicate the practical lines of direct immunity research opened up by these experiments, it is impossible to ignore the suggestions they offer as to the meaning of sensitization and the superiority of living vaccines over dead, as well as to the necessity for re-examination of the whole scheme of vaccine-therapy. And in the meanwhile, if they do no more than press home the necessity for fresh investigations into the true source and character of the natural antigens of disease they will faithfully have served their purpose.

NOTE.—Since this paper was placed in type two articles on experimental fever have appeared in a German periodical by Thiele and Embleton which might seem at first sight to affect some of the conclusions reached in this communication.[9] In the articles referred to, the authors—as so many have done before them—have fallen victims to the very fallacies which Dr. Penfold and I have already exposed in the English journals.[10] One of the fundamental errors, for example, in all study of experimental fever produced by injection is the assumption that water which is innocent of demonstrable infection at the time of injection must also be innocent of pyrogen, and that water collected direct from the condenser of a distilling apparatus in daily use and then filtered is necessarily pure water. In consequence, therefore, of failure to recognize this source of error these workers in many of their experiments unwittingly used impure water, as is clearly shown in their own protocols. This accident is alone sufficient to invalidate all the experiments and deductions based thereon, though there are other fallacies of almost equal importance which I have fully described elsewhere.

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APYREXIAL TYPHOID.

BY

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YEOVIL.

APYREXIAL typhoid, although known to exist, is of excessively rare occurrence, and may therefore readily pass unrecognized, particularly in the absence of an epidemic of the disease. Cases of this type have been described by Gerhardt and Dreschfeld, and of these brief mention is made by the latter in Allbutt's *System of Medicine*.

In typhoid fever we know that, in patients of over 40 years of age, the temperature curve is lower and less characteristic, but although cardiac, pulmonary, and renal complications are more common, splenic enlargement and rose rash are frequently absent. For these reasons, therefore, the diagnosis may be rendered more difficult. The case recorded below will serve to illustrate these points.

The patient was a woman aged 60, who had resided in the same house for more than thirty years, and during that period had never required medical assistance for more than minor ailments. A careful investigation into her previous history precluded all possibility of any previous attack of typhoid fever.

The present illness commenced in the first few days of September, with the usual feelings of malaise, and with gradually increasing diarrhoea. She took to her bed on September 8th. When first seen, on September 10th, the patient was in an exhausted condition, with a dry, furred tongue and subnormal temperature. The outstanding feature of the case at the time was the exceedingly profuse diarrhoea, which persisted in spite of all the usual remedies. On September 12th (two days later) the patient began to wander, and sank into a semi-comatose state, in which she remained for the ensuing fourteen days. During this period the intestinal symptoms were unchanged, there was a moderate distension of the abdomen, but no spots or enlarged spleen were present then or later. Widal's reaction on September 16th was positive in every dilution. From the onset of the attack until September 25th (that is, the fourth week of the disease), when complete consciousness returned, the mouth and surface temperatures were invariably subnormal, and the rectal temperature, taken twice daily, never exceeded 99.4°. From September 26th to October 4th the mouth and rectal temperatures each reached their maximum of 99.6° and 100.4° respectively, after which they dropped again.

During the fourth week a further specimen of serum was obtained for the purpose of comparative agglutination reactions to *B. typhosus* and other allied organisms, with the following results:

B. typhosus agglutinated up to 1 in 2,000.
B. paratyphosus B agglutinated up to 1 in 200.
B. paratyphosus A agglutinated very slightly.
B. enteritidis (Gaertner) agglutinated not at all.

The patient ultimately made a good recovery, and without serious complications.

An investigation of the water-supply of the (isolated) dwelling revealed a privy in close proximity to the well, which constituted the sole supply of drinking water on the premises. This water, on examination by the county authority, proved to be contaminated with sewage.

In the light of all the bacteriological findings, I think there can be very little doubt that in this case there existed a true typhoid infection.

A SIMPLE AND RAPID METHOD FOR THE ADMINISTRATION OF SUBCUTANEOUS SALINES.

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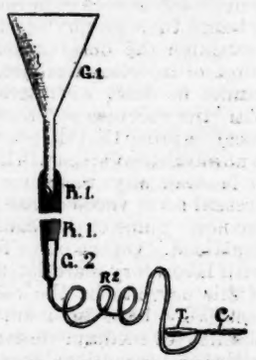
THE administration of saline solution by the method of subcutaneous injection has many points in its favour and should by no means become obsolete. There is no method to equal it when the absorption of a large quantity of fluid is required.

In numerous cases of late years I have made use of an apparatus which, from its convenience and simplicity, has served to replace more cumbersome methods.

The only requisites are (1) a large silver cannula from a Southey's tube apparatus; (2) Southey's rubber tubing; (3) a small piece of glass tubing, narrow at one end to fit this tubing, and larger at the other (for this an ordinary clean fountain-pen filler does very well); (4) a large glass funnel connected to the glass tube by rubber. The various parts are joined together and the whole is sterilized by boiling.



G1, Glass funnel. R1, Large bore rubber tubing. G2, Glass tube. R2, Southey's rubber tubing. T, Trocar. C, Cannula.

The mode of introduction deserves special notice, for it differs considerably from the usual method. The anterior axillary fold is grasped firmly and drawn outwards. The trocar with its cannula is then passed into the skin in a direction vertical to the chest wall and is pushed steadily through the axillary fold so that its point emerges within the axilla. The trocar is then withdrawn and the cannula is pressed onwards into the axilla until its shoulder rests flush with the skin.

The fluid as it emerges from this cannula spirts in all directions and is poured out into three distinct plains, separated anatomically into watertight compartments by the deep fascial layers. Into the most superficial of these

fluid flows into the fatty tissue over the pectoral muscle and around the breast and extends upwards over the clavicle into the neck. Beneath this saline exudes into the pectoral muscles and is limited by the deep fascia on either side. Absorption is here rapid owing to the great vascularity of the part and to the pressure maintained by the fascial limitations. Lastly distension of the axillary space takes place and the normal concavity of the axilla is replaced by a rounded swelling.

Fluid is absorbed very rapidly when introduced in this way and two pints can be run into the tissues in twenty minutes, little trace of swelling being found. After an hour the cannula is left *in situ*, and the administration can be repeated as often as necessary.

This method has one disadvantage, and I think only one. The introduction is rather painful, but hardly more so than when the needle is merely inserted beneath the skin, while the pain resulting from distension is largely obviated. But in the majority of cases the patient is still under the influence of the anaesthetic when the administration is given or is so collapsed as to be insensitive to pain.

This objection is more than compensated for by the ease of introduction and rapidity of absorption of a large quantity of saline by means of a simple appliance which every practitioner has at his command.

ADRENALIN IN THE EMERGENCY TREATMENT OF NON-CORROSIVE POISONING BY THE MOUTH

(CYANIDE, STRYCHNINE, ACONITE, ETC.).

BY

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WHEN a chemical substance enters the stomach or bowel it must first be absorbed into the circulation before it can exert a general direct action on the body. One of the chief factors determining the rate of absorption of any substance introduced into any part of the gastro-intestinal tract is the vascularity of the part, and particularly of the lining membrane. Now if, after the introduction into the stomach of a poisonous chemical substance whose general toxic action depends partly upon the rate at which it enters the circulation, we are able to limit the rate of absorption of the drug—for example, by diminishing the blood supply to the mucosa of the stomach—time is provided for the preparation and adoption of methods to neutralize any possible action which would normally follow the introduction of the particular substance into the stomach, either by removing it altogether by means of a stomach tube and a stomach wash-out, or by inactivating it by means of a chemical antidote. Particularly valuable would such an agent be which would lower the rate of absorption into the circulation of a substance which, entering the blood in large quantity, would destroy the life of the individual, but which the body is able, by the exercise of special powers, to efficiently neutralize when it gains entry into the economy slowly. To such a category belong the cyanides. Theis[8] and Buttron[1] have demonstrated that when an animal has been killed by a lethal dose of KCN the amount of cyanide present in the organs diminishes on standing, while Lang[4] and Grober[3] have shown that when HCN is introduced into the diet of an animal the amount of cyanide in the stomach diminishes, while the amount of sulphocyanate in the saliva and urine is increased.

Intraperitoneal injection of adrenalin has been found by Exner[2] to diminish the rate of absorption of a poison, such as strychnine or potassium cyanide, when introduced into the stomach. This academical piece of work suggested the investigation of the effect of the introduction of adrenalin* *into the stomach* on the absorption of rapidly-acting poisons, such as cyanides, strychnine, and aconite, also introduced into the stomach, and whether such administration of adrenalin had any value in the practical treatment of cases of accidental poisoning by these rapidly-acting drugs.

* Throughout this investigation adrenalin (P. D. and Co.) and hemisine (B. W. and Co.) were both used with the same effect.

CYANIDES.

The hitherto generally recognized antidote in cases of cyanide poisoning has been that advocated by Professor C. J. Martin and Mr. J. A. O'Brien.[5] Its principle is the formation in the gastro-intestine of Prussian blue, which is a practically innocuous substance, by the administration subsequent to the cyanide poisoning of ferrous sulphate and alkali. They proposed that 30 c.cm. (1 oz.) of ferrous sulphate solution of 23 per cent. strength, 30 c.cm. (1 oz.) of KOH (5 per cent. solution), and 2 grams (30 grains) of magnesia, the former two kept in hermetically sealed phials, be mixed and immediately taken. In their experiments on rabbits, using a lethal dose of 0.01 gram, given as 10 c.cm. of a 0.1 per cent. solution of KCN per kilogram of body weight, they found that death invariably ensued unless the antidote were administered within five minutes. Considering that the antidote consists of three separate ingredients, which must be mixed before use, the preparation of the antidote must occupy time and would probably take about two minutes, even if everything were at hand; so that if about three minutes were lost before discovering that cyanide had been accidentally taken, the patient's chances of recovery would be very small, for we may legitimately assume that the respite or "latent period" would only be a little if any longer in the human being than in the rabbit. Also, the ordinary medical man might not have the antidote ready at hand, and the value of some means of delaying the absorption of the poison from the gastro-intestine is apparent, and this is especially so in the case of poisoning by cyanide, whose action is so rapid.

Intraperitoneal injections of adrenalin having been found to diminish the rate of absorption of strychnine introduced into the stomach,[2] it was therefore decided to try and see if adrenalin administered by the mouth would have any effect in giving us more time to treat a case of cyanide poisoning. As a preliminary investigation, KCN solution, of strength varying from 1 per cent. to 5 per cent., was painted on various mucous membranes (conjunctiva, buccal mucous membrane, gastric mucosa) for five minutes, and then adrenalin (1 in 10,000) painted on, when blanching occurred in every case.

These experiments showed that adrenalin will still exert its vaso-constrictor action even after the arteriolar wall has been subjected to cyanide.

Further experiments showed that when adrenalin solution was administered (about 4 to 5 c.cm. 1 in 10,000 solution per kilogram body weight, the rabbit receiving the lethal dose of 0.01 gram KCN per kilogram body weight) either with or subsequently to the administration of the poison the animal's life was prolonged, and if the adrenalin solution were administered within five minutes of the poison, and Martin and O'Brien's antidote given, or the stomach washed out within four or five minutes *subsequent* to the administration of the adrenalin, the animal's life would be saved. Thus, the administration of adrenalin "on sight" would give a respite of some minutes during which the antidote could easily be prepared and administered or the stomach contents evacuated.

The results of a few of the more crucial experiments are appended. A number of experiments have been discarded because the rabbits did not tolerate the washing out of the stomach to which many were subjected. It may also be stated at the outset, that Martin and O'Brien[5] found that if a dose of cyanide were going to prove fatal the rabbit always died within thirty minutes, so that we may take it that if we are able to tide a patient over the fatal thirty minute limit by any means at our disposal, then the patient will have a very fair chance of recovery. Of course, if it be borne in mind that the adrenalin only delays the absorption of the poison (principally by its vaso-constrictor action on the vessels of the mucosa), it will be recognized (as Experiment No. 4 shows) that those cases are practically hopeless in which a large dose of the poison has been taken and in which the amount of poison being absorbed through the mucosa even under maximal adrenalin influence exceeds the lethal limit, unless the chemical antidote be immediately given or the stomach immediately evacuated. The time relation here indicated (namely, that the pathological effect depends to a certain degree upon the amount of poison coming into contact with the tissues per unit of time), and the fact that the administration of

an amount of KCN below a certain limit is accompanied by very little, if any, evident effect on the animal, seem to suggest that we have in the case of the action of chemical substances on all tissues of the body a parellelism to the action of various strengths of stimuli acting on a motor nerve and affecting the muscular response in the presence of a limen or threshold, an optimum and maximal strengths of stimulation. Further research, however, is required to determine this.

Further experiments showed that the administration of doses of adrenalin far in excess of those recommended by the cited experiments left, as far as the eye could detect, no lasting effects on the animals. The general results obtained from rabbits were:

The animal (receiving a lethal dose of 0.01 gram KCN per kilogram body weight) will recover if—

1. Adrenalin (3 c.cm. 1 in 10,000 solution) be administered within five minutes of the poison.
2. Martin and O'Brien's antidote given or the stomach washed out within about four minutes of the administration of the adrenalin.
3. A further small dose of adrenalin be given.

The area of a rabbit's stomach was found to be 95 sq.cm. That of a man is given as about 3,000 sq.cm.[9] Therefore the dose of adrenalin which a man should take on this basis of, say, 3 c.cm. of 1 in 10,000 per 100 sq.cm. stomach area, would be about 90 c.cm., that is, 9 c.cm. (3 dr.) of the 1 in 1,000 solution, diluted (that is, 90 c.cm. or 3 oz. of 1 in 10,000 solution) followed afterwards by about 5 c.cm. (1½ dr.) of the 1 in 1,000 solution, diluted (that is, 50 c.cm., or nearly 2 oz. of 1 in 10,000 solution).

Method of Treatment.

The experiments seem to show that in a case of cyanide poisoning the following procedure is advisable:

1. Adrenalin be immediately given.
2. Then Martin's antidote if it be at hand.
3. Then wash the stomach out; and
4. After having washed the stomach out, administer some more adrenalin.

The object of the latter is to "follow up" any cyanide which has escaped the washing out process or Martin and O'Brien's antidote, and so retard its absorption, for Martin and O'Brien found that if death did not ensue within thirty minutes of administering the cyanide, the animal would live. It might also be advisable to give a brisk saline purge soon afterwards. Should Martin's antidote not be at hand, the order of procedure should be 1, 3, 4, as above.

There are two further considerations which must be taken into account before the recommendations made above are to receive acceptance. First, is the adrenalin affected by the HCl of gastric juice or by the pepsin? This question has been answered by Oliver and Schäfer[7] who showed that gastric digestion (by pepsin—HCl) for twenty-four hours does not seem to lessen the physiological properties of extract of suprarenal gland. Secondly, how long will the adrenalin introduced into the alimentary canal continue to act on the lining membrane? The results obtained by Oliver[8] furnish the desired information. To quote from his paper, "Suprarenal extract invariably produced the most decisive contraction, and one, moreover, which persisted for thirty to sixty minutes. The constriction was equally pronounced whether the spinal cord remained intact or was destroyed. The velocity of the circulation was likewise lessened, and at the acme of the constriction the onward flow might cease." Oliver's recommendation that these might be verified on the inflamed conjunctiva of a rabbit has been confirmed. It was also found that on administering adrenalin solution to a rabbit with a *full* stomach, there was a constricting action not only on the vessels of the gastric mucosa but also on the vessels of the mucosa some inches down the small intestine, which lasted for quite fifteen minutes.

STRYCHNINE AND ACONITE.

In the case of these poisons, too, a number of experiments were performed, and the efficiency of adrenalin in delaying absorption conclusively proved. With these poisons the administration of adrenalin until the stomach can be thoroughly emptied is indicated, and in them the stomach *must* be emptied and the poison got rid of, otherwise the poison will be absorbed and exert its action on the body when the action of the adrenalin on the stomach has ceased. This is shown by Experiment No. 14.

Experiments were also tried with other rapidly acting poisons, such as potassium binoxalate (neutral), but the gastric mucosa was found (*post-mortem*) corroded, and free blood was found in the stomach, so that disturbing factors due to erosion and not remediable by adrenalin were present.

From these experiments on rabbits and dogs it is at once seen that in extract of the medulla of suprarenal gland—which is marketed under the names of adrenalin (P. D. and Co.), hemisine (B. W. and Co.), suprarenin, epinephrin, adrenine, renaglandin, etc.—we have an agent which will convert the stomach or other absorbing viscus on which it is acting into a practically non-absorbing bag in which the poison lies, ready to be absorbed when the action of the adrenalin passes off, but at the same time being absorbed in relatively small amount while the adrenalin is acting; and so a respite is gained during which the poison can be removed by mechanical means or neutralized *in situ* by some chemical antidote.

SUMMARY OF PRINCIPAL EXPERIMENTS.*

Experiments with Cyanide.

Experiment 1.—Rabbit. *Conjunctiva:* KCN (0.1 per cent.) painted on for five minutes. Adrenalin (1 in 10,000) applied. Blanching. *Mucosa of Lips:* Same as conjunctiva.

Experiment 2.—Rabbit. Chloralized. Stomach opened. One spot on mucosa painted with *5 per cent. KCN* for five minutes (and another control spot with normal saline). Adrenalin (1 in 10,000) then painted on both spots, and blanching produced in both.

Experiment 3.—Two rabbits *in full digestion.* Chloralized. Stomach tube passed per oesophagus.

Rabbit A, 1,100 grams. 11 c.cm. KCN solution (0.1 per cent.) administered. Three minutes after giving KCN respirations ceased.

Rabbit B, 1,100 grams. 11.5 c.cm. KCN solution (0.1 per cent.) administered. Eight minutes after giving KCN respirations reduced to mere flicker, then respirations improved and became normal, then gradually shallower. Thirty minutes after giving KCN respirations ceased. On opening the stomach the mucosa was seen to be red.

Experiment 4.—Two rabbits in full digestion. Chloralized.

Rabbit A, 1,000 grams. 4 c.cm., 0.5 per cent. KCN solution. Two and a half minutes after giving KCN respirations ceased.

Rabbit B, 1,200 grams. 4 c.cm., 0.5 per cent. KCN solution:

2 minutes after giving KCN, 4 c.cm. 1 in 10,000 adrenalin given.
2½ minutes after giving KCN, respirations ceased.

Experiment 5.—Rabbit, 1,600 grams in full digestion. 16 c.cm. KCN (0.1 per cent.) solution given:

2 minutes after giving KCN, 6 c.cm. adrenalin (1 in 10,000) were given.
6 minutes after giving KCN, rabbit had a few convulsions which passed off.
10 minutes after giving KCN, commenced washing stomach out, but washing out process was unsuccessful.
24 minutes after giving KCN, further convulsions.
29 minutes after giving KCN, respirations ceased.

The stomach-tube was found blocked with a piece of stomach content (mucus).

Experiment 6.—Rabbit, 1,600 grams in full digestion. Etherized, 16 c.cm. KCN solution (0.1 per cent.) given:

2 minutes after giving KCN, convulsions.
4½ minutes after giving KCN, 4 c.cm. adrenalin (1 in 10,000) given.
7 minutes after giving KCN, stomach washed out.
65 minutes after giving KCN, respirations ceased.

There were signs of hypostatic congestion and oedema of the lungs on *post-mortem* examination.

Experiment 7.—Rabbit, 1,300 grams. Chloralized (lightly), 13 c.cm. KCN solution (0.1 per cent.):

2 minutes after giving KCN, convulsions.
2½ minutes after giving KCN, 6 c.cm. adrenalin solution (1 in 10,000).
6 minutes after giving KCN, stomach washed out.
7 minutes after giving KCN, 3 c.cm. adrenalin solution (1 in 1,000).

Recovery.

*Some of these results originally appeared in the *Intercolonial Medical Journal of Australasia*, July 20th, 1909.

Experiment 8.—Rabbit, 700 grams, in full digestion. Chloralized lightly.

7 c.cm. KCN solution (0.1 per cent.) given.
4 minutes after giving KCN, 6 c.cm. adrenalin (1 in 10,000 given).
9 minutes after giving KCN, stomach washed out.
19 minutes after giving KCN, 3 c.cm. adrenalin (1 in 10,000 given).

Recovery.

Experiment 9.—Rabbit, 950 grams, 9.5 c.cm. KCN solution (0.1 per cent.) given:

5 minutes after giving KCN, 6 c.cm. adrenalin (1 in 10,000 given).
8½ minutes after giving KCN, Martin's antidote administered.

Convulsions. Recovery.

Experiment 10.—Rabbit, 1,250 grams. 12.5 c.cm. KCN solution (0.1 per cent.):

4 minutes after giving KCN, 3 c.cm. hemisine (1 in 10,000).
8 minutes after giving KCN, convulsions.
12 minutes after giving KCN, Martin and O'Brien's antidote given.
25 minutes after giving KCN, respirations ceased.

Experiment 11.—Rabbit, 1,300 grams. 13 c.cm. KCN solution (0.1 per cent.) administered:

3½ minutes after giving KCN, 3 c.cm. adrenalin (1 in 10,000) given; convulsions.
11 minutes after giving KCN, Martin's antidote + 2 c.cm. adrenalin (1 in 10,000) given; respirations were slowed.
15 minutes after giving KCN, respirations were of expiratory type for about one minute.

Conjunctival reflex absent and pupils dilated till about twenty-two minutes after poisoning. Pupils then began to contract somewhat. At this time the breathing was alternately mouth and nasal, and respirations were sixteen per minute. About thirty-seven minutes after poisoning respirations were twenty per minute, and breathing still mouth and nasal alternately. Conjunctival reflex returning fifty-two minutes after poisoning; respirations twenty-four per minute, and nasal in character. Animal apparently asleep, and breathing quietly, when it was left tied up in the laboratory two hours after administering the cyanide. Found dead next morning. There was a strong smell of gas in the laboratory and it is quite possible that the animal died of CO poisoning.

This experiment shows the beneficial effect to be derived from giving the animal a further small dose of adrenalin.

Experiment 12.—Rabbit, 1,300 grams. 28 c.cm. adrenalin (1 in 10,000) given. Twenty-four hours afterwards stomach examined. No pathological condition of mucosa apparent.

Experiment 13.—Rabbit. 35 c.cm. adrenalin solution (1 in 10,000) administered. Twenty-four hours afterwards no abnormal appearances in stomach, intestines, kidneys, liver, heart.

Experiments with Strychnine, Aconite, and Other Poisons.

Experiment 14.—Two rabbits, in full digestion, were taken.

Rabbit A, weight 950 grams. Received 11.5 c.cm. strych. sulph. solution (that is, 12 c.cm. per kilogram body weight) into its stomach. Death occurred forty-two minutes after.

Rabbit B, weight 1,150 grams. Received 13.8 c.cm. strych. sulph. solution + 4 c.cm. adrenalin (1 in 10,000) into its stomach. It was still alive four hours twenty minutes after, but was found dead next morning in position of opisthotonos.

Exner[2] showed that rabbits which received a dose of 0.0052 gram strychnine sulphate on the average exhibited convulsions in ten minutes and death in twenty minutes.

Experiment 15.—Dog, weight about 8½ kg.; starving; was morphined, and received ⅛ grain (0.025 gram) strych. sulph., dissolved in 30 c.cm. saline.

10 minutes after giving the strychnine, 12 c.cm. adrenalin (1 in 10,000) were given.
16 minutes after giving the strychnine, stomach washed out.
21 minutes after giving the strychnine, 8 c.cm. adrenalin (1 in 10,000), immediately followed by 1 oz. mag. sulph.

Recovery.

A dog of about the same weight, size, age, and breed received ⅛ grain strych. sulph., and died in six hours.

Experiment 16.—Eighteen days after Experiment 15. The same dog used; in full digestion; morphined. Received ⅛ grain (0.026 gram) strych. sulph., dissolved in 30 c.cm. water.

12 minutes after giving the strychnine, 12 c.cm. adrenalin (1 in 10,000) given.
18 minutes after giving the strychnine, commenced washing stomach out.
27 minutes after giving the strychnine, 8 c.cm. adrenalin (1 in 10,000), immediately followed by 1 oz. mag. sulph.

Recovery.

Experiment 17.—Two rabbits in full digestion taken.

Rabbit A, weight 1,150 grams. Received 11.5 c.cm. lin. A.B.C. Died fifty-nine minutes after.

Rabbit B, weight 1,250 grams. Received 12.5 c.cm. lin. A.B.C. + 5 c.cm. adrenalin (1 in 10,000). Died two hours four minutes after.

Experiment 18.—Two rabbits in full digestion taken.

Rabbit A, weight 1,350 grams. Received 13.5 c.cm. lin. aconit. (lin. aconit. *B.P.*, diluted ½). Died fifty-seven minutes later.

Rabbit B, weight 1,350 grams. Received 13.5 c.cm. lin. aconit. (lin. aconit. *B.P.*, diluted ½) + 5 c.cm. adrenalin (1 in 10,000). Died six hours twenty-five minutes later.

Experiment 19.—Two rabbits in full digestion.

Rabbit A, weight 1,300 grams. Received 2 grams pot. oxalate in 20 c.cm. water. Died fifty minutes after poison.

Rabbit B, weight 1,400 grams. Received 2 grams pot. oxalate in 20 c.cm. water + 5 c.cm. adrenalin solution (1 in 10,000). Died fifty-eight minutes after poison.

My sincere thanks are due to Professor W. A. Osborne, D.Sc., under whose direction this research was conducted, for the very valuable advice and encouragement he has given me while the work was in progress.

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THE LATE VASOMOTOR PARESIS DUE TO ADRENALIN.

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A GENTLEMAN consulted me on account of multiple exostoses of the external auditory meatus, which so far occluded the lumen that beyond them only the finest Eustachian bougie was passable, and nothing was visible. Presumably the marked tinnitus, which was his chief complaint, was due to an accumulation of sebum and epithelial débris deep to the growths; for this tinnitus remained absent so long as he regularly used drops of hydrogen peroxide.

His unwillingness to persist with this treatment; a moderate degree of obstructive deafness to speech, acumeter, and tuning-fork; and the danger that an infection of débris between the growths and the membrane might lead to perforation and otitis media, were the indications for surgical interference.

The external meatus was unusually tortuous; the growths, only one of which was pedunculated, were very deep, and at subsequent operation proved to be actually continuous with the annulus tympanicus. The difficulty of access emphasized the necessity for a clear bloodless field in operating. Therefore, before making the post-aural incision, adrenalin chloride was injected along the superior, posterior, and inferior meatal walls as far as the growths—5 drops of a 1 in 2,000 solution in each situation. The whole area became and remained remarkably bloodless, and a branch of the posterior auricular was the only vessel tied during the operation, at the conclusion of which a rubber tube, of such a length that its outer end hitched just under the tragus, was pushed down to the intact drum.

At the first dressing, on the third day, the tube had become slightly unhitched from the tragus, and had slipped out about ⅛ in. It could be pushed back, but on the release of pressure again emerged for this small distance, very slowly, as if levered up by an elastic body beneath. Next day the tube projected about ⅛ in.; it was again replaced, and pressure applied over it by a small pad under the dressings.

On the fifth day, finding it impossible to keep the tube in position, it was removed, and an inspection made. The membrane was completely hidden by the edge of the skin of the posterior meatal wall, where this skin had been cut across just distal to the growths. The skin could not be replaced in position, being pushed forwards from behind, presumably by blood-clot

On the seventh day, as the flap showed no promise of retracting, I reopened the post-aural wound, and found that from here all along the posterior meatal wall bone and skin were separated by a clot. In amount this clot was sufficient to fill a dessert-spoon, and more than the space would be expected to hold; much of it lay in the deepest part of the meatus, levering the cut skin-edge forwards, so that it lay directly over and parallel to the drum. After the removal of the clot and the passage of a tube as before, healing, with a good lumen and cure of all symptoms, was uneventful.

This case shows that, apart from any of its general physiological disadvantages, adrenalin may cause mechanical trouble by reason of the vasomotor paresis which follows the phase of vaso-constriction.

THE BREAKING OF THE VICIOUS CIRCLE.

BY

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DISEASE, when complicated by the presence of a vicious circle, presents problems for solution peculiar to itself. The physician is no longer confronted with a morbid process which Nature is doing her best to rectify, and where treatment mainly consists in furthering and regulating her efforts. When a circle is present Nature is aggravating the disorder. The *vis medicatrix* has become the *vis devastatrix*, and what looms before the sufferer is at best a prolonged disorder, at worst a *descensus Averni*.

Vicious circles are widespread in their distribution, and play a great part in clinical medicine. Their study promotes a visualization of those pathological sequences that are ever acting reciprocally on each other, and greatly assists the accurate adaptation of remedies to the complex conditions of disease.

Although a large part of the *ars medendi* consists in "breaking the circle," this aspect of therapeutics has, strange to say, almost wholly escaped attention. True, many years ago a great teacher wrote: "Let it be a cardinal principle of treatment to make an effort to interrupt vicious circles."[1] But even to-day our textbooks give but little assistance in the solution of problems presented by reciprocally acting consequences. It may be useful to indicate the principles on which treatment under such circumstances must be based, and to illustrate those principles by a few examples.

LOCUS MINORIS RESISTENTIAE.

One signal advantage presented by the circle is that there are at least two points at which its evil round may be interrupted. In the words of Lauder Brunton, "We must see where the circle can best be broken," since, "if we can break the circle at one point, we allow recovery to commence."[2] Our first step then is to seek the *locum minoris resistentiae*. The discovery may not be easy, inasmuch as it presupposes an accurate diagnosis of the various factors that constitute the circle, and this may involve a painstaking investigation, as emphasized by Clifford Allbutt:

> First of all we shall begin by a close searching for any vicious circle of function, and, if found, of cutting any link of it, whatsoever or wheresoever. . . . A floating kidney, a disorder of the uterus, a faulty eye, a "tea" or "tobacco" heart, or other local irregularity, trivial enough perhaps in itself, may close and perpetuate the vicious orbit of function.[3]

When the factors constituting the circle have been elucidated, our duty is to break it through at the weakest point. If the gyration can be stopped the whirling currents will be restored to their normal direction. "The hound which had turned to hunting its own tail may be put again on the track."

The *modus operandi* will vary with the special circumstances of each case. But some illustrations may be grouped under the following heads:

I. The breaking of the circle by hygienic measures.
II. The breaking of the circle by surgical appliances.
III. The breaking of the circle by drugs.
IV. The breaking of the circle by operation.

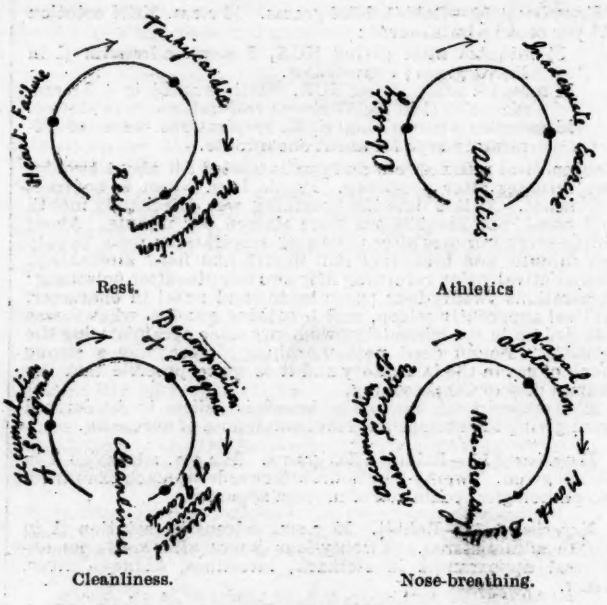
I. *The Breaking of the Circle by Hygienic Measures.*

Rest.—Physical rest is a powerful means of breaking some circles. An illustration is presented by many cases of cardiac failure, where a dilated and overburdened myocardium is associated with visceral disorder, the two conditions acting and reacting on each other.

Gibson thus describes the circle:

> Sooner or later, according to its form and severity, chronic valvular disease, with compensation, itself disposes to failure by establishing a vicious circle of slow, progressive impairment of the viscera and their great vital functions—the lungs, liver, stomach, bowels, kidneys, indeed the myocardium itself.[4]

In many such cases, if the patient is kept so quiet as "not to take one beat out of the heart more than can possibly be avoided," immense relief is given to the failing myocardium. More blood is sent to the lungs and viscera, and returns as a more nutrient and aërated supply. The cardiac action is strengthened, its tonicity is raised, so that the heart can pump out the stagnating blood and lower the venous pressure. Even moribund persons



THE BREAKING OF THE CIRCLE BY HYGIENIC MEASURES.

recover, and continue practically well for years. Lauder Brunton describes the value of such absolute rest:

> As in many other things the conditions in cardiac disease form a vicious circle. The disordered circulation disturbs the function of other organs, and these in turn make the circulation worse. . . . In such cases it is evident that the patient is bound to die, and to die a somewhat painful death, unless medical art can afford him some assistance. It is very fortunate, however, that in such cases medical art can do so much. . . . If we break the vicious circle at one point, we allow recovery to commence; and one of the most important agents—I think I ought to say *the most important agent*—in the physician's power *is absolute rest*.[5]

Exercise.—Under other circumstances the opposite measures, namely, increased exercise, is called for, as in the circle of obesity, which Krehl describes:

> As soon as the accumulation of fat begins to deter the patient from taking active exercise a vicious circle is established, and he tends to increase in weight more and more.[6]

If the physician insists on some athletic sport, or at any rate on a more active mode of life, the morbid correlations may be interrupted and health restored.

Cleanliness.—Want of cleanliness may give rise to various circles, as, for example, to seborrhoea genitalium, where retained and putrefying secretions irritate the prepuce and glans, and thus provoke further secretion and putrefaction. In Corner's words:

> The greater the irritation of the glands by decomposing secretion the greater the amount of secretion they produce. In this way a vicious circle is established.[7]

The regular removal of these secretions will rapidly diminish the excessive glandular activity, and thus check the morbid reactions.

Prevention of Infection.—This may be illustrated by the success of preventive measures where thread-worms are present. When a case is left to Nature, the irritation at the anus secures by auto-infection the continuance of the race of parasites producing it, and patients thus keep up their stock of parasites for many years. If, however, precautions are taken so as to prevent reinfection from without as well as auto-inoculation, the worms disappear rapidly and a radical cure may be looked for in four to six weeks, that being the period by which all the ova swallowed on a particular date will have developed into worms and been evacuated in the faeces.[8]

Nose-breathing.—A fifth illustration may be found in restoration of nasal respiration, where mouth-breathing has established a circle. In weakly children nasal secretions are sometimes allowed to accumulate and block the nostrils until the child resorts to mouth-breathing. This in its turn favours the retention of nasal secretions and consequent nasal obstruction. As Ashhurst says:

Obstruction, by preventing or interfering with the expulsive force of the expiratory current, prevents the removal of the usually abnormal amount of secretion, either by blowing the nose or otherwise; its accumulation is in its turn an efficient factor in producing obstruction, and a vicious circle . . . is thus established.[9]

By efficient use of the pocket-handkerchief the nasal passages can be cleared and the circle broken.

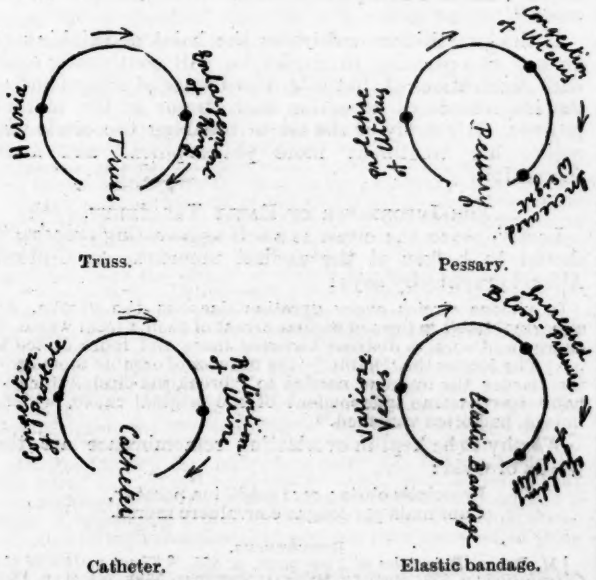
II. *The Breaking of the Circle by Surgical Appliances.*

Elastic Bandage.—Varicose veins are frequently complicated by a circle, since the dilatation leads to increased tension on the vein-walls, and the increased tension aggravates the dilatation. As Romberg writes:

It is often impossible to say how the disorder originates, for the venous dilatation (due to some mechanical obstruction) and the anatomical changes in the vein-walls act reciprocally on one another. Thus a vicious circle, whose pathogenesis is obscure, controls the course of events.[10]

The use of an elastic bandage supports the weakened walls of the veins, prevents their further dilatation and breaks the circle.

Catheter.—Prostatic retention of urine is often due to reciprocal correlations. For the enlarged venous plexuses



THE BREAKING OF THE CIRCLE BY A SURGICAL APPLIANCE.

surrounding the prostate in elderly men readily become congested, causing obstruction to the urine which accumulates in the bladder. The pressure of the urine in its turn aggravates the venous engorgement, and so the process is perpetuated. Catheterization by evacuating the bladder relieves the pressure on the venous plexuses and cures the retention.

Pessary.—Uterine congestion and prolapse are other conditions which aid and abet one another, and so give rise to a circle. A well-adjusted pessary prevents the prolapse and thus relieves the congestion, and breaks the circle.

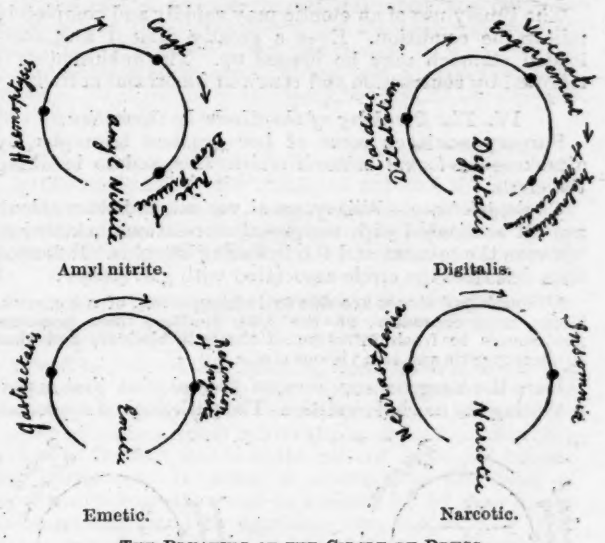
Concave Lens.—A fourth illustration is presented by progressive myopia in which the myopia and the elongation of the eyeball react on one another. As Sattler writes:

If the elongation of the eyeball has once begun, myopia has a tendency to react upon itself by a kind of vicious circle as long as the noxious conditions which caused it are still in action. The posterior wall of the sclerotic, now somewhat attenuated, is more liable to give way, and the more egg-shaped the globe becomes the longer is the region of contact of the muscles with the surface of the eye.[11]

The prescription of concave lenses removes the near point, relieves the undue pressure on the globe, and checks the progress of the myopia.

III. *The Breaking of the Circle by Drugs.*

Amyl Nitrite.—Haemoptysis may be complicated by what Hare calls "one of the most highly vicious circles in pathology," the haemorrhage, the cough, mental per-



THE BREAKING OF THE CIRCLE BY DRUGS.

turbation and rise of blood pressure being factors that act and react on one another. One practitioner considers that he can best break the circle by using amyl nitrite[12] to lower the blood pressure. A second prefers to lull the cough by means of morphine. A third pins his faith to the styptic action of ergot. In each case what appeared the *locus minoris resistentiae* is attacked.

Digitalis.—Many cases of failing heart are complicated by tachycardia. The enfeebled myocardium beats so rapidly that the ventricles can neither fill nor empty themselves as they should. The result is progressive weakening of the myocardium, and a dangerous circle is present, which may be broken by digitalis, as Pavlov describes:

An uncompensated heart beats rapidly, and thereby only aggravates its condition. Its time of rest—that is of recovery—of restitution of the organ is shortened. A vicious cycle is set up. The weak action of the heart lowers blood pressure, the lowering of this leads (from known physiological causes) to an increase in the number of beats, the quickening leads to weakening of the organ. Without doubt the digitalis aids by breaking through this vicious cycle in that it greatly slows the pulse, and thereby gives new power to the heart.[13]

Sedatives.—Conditions of exaggerated reflex excitability are often met with in which prolonged irritation and weakness have led to a state of unrest which perpetuates and intensifies the weakness. Thus the respiratory centre may be exhausted by constant irritation of the air passages giving rise to incessant coughing. Or the gastric centre, taxed by severe stimulation from stomach, kidney or uterus, lapses into a similar condition of irritable weakness. Although useless, the vomiting continues incessantly and may prove fatal.

Rest is urgently indicated for all cases of this kind, and has to be secured in many instances by means of morphine, which breaks the vicious circle of unrest and irritability; and a beginning once made, rest begets rest.[14]

Other circles are closely associated with the presence of pain or insomnia. The reciprocal correlations can here be

attacked by a suitable sedative, which by the removal of pain will break the circle; as Herman has well described:

The great causes of neurasthenia are conditions which (*a*) cause continuous pain, and (*b*) prevent sleep. The two things often form a vicious circle. A small local cause disturbs sleep, and want of sleep makes the nervous system oversensitive. In proportion as the neurasthenic symptoms have coincided in time with the development of local pain, so surely may we conclude that the removal of the local pain and the procuring of sound sleep will cure the neurasthenia.[15]

Emetic.—A troublesome circle may be due to dilatation of the stomach associated with prolonged retention of food. The dilatation increases the stasis, and the stasis the dilatation.

Dilatation may be the cause, accompaniment, or sequel of chronic gastritis; subacidity with fermentation and stagnation forms a vicious circle constituting Cohnheim's so-called vinegar and gas factory, and may likewise be regarded an an important etiological factor.[16]

The timely use of an emetic may rapidly and completely relieve the condition. Even a greatly dilated and overloaded stomach may be braced up. The unburdening is followed by contraction and renewed functional activity.

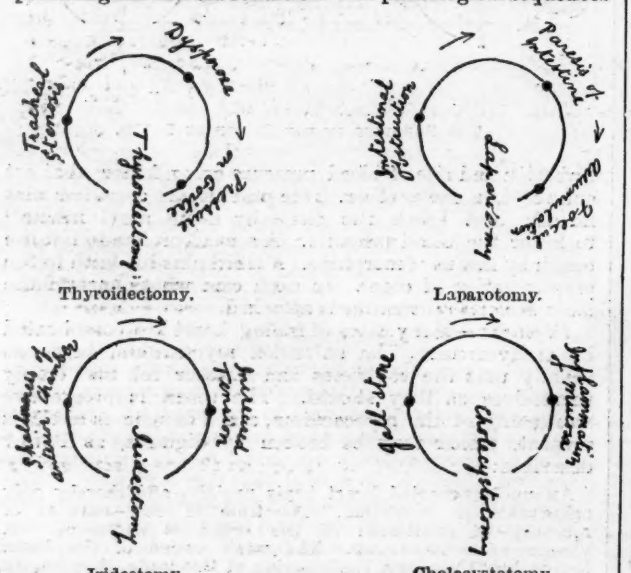
IV. *The Breaking of the Circle by Operation.*

Surgery achieves some of her greatest triumphs by attacking the *locum minoris resistentiae*, and so breaking the circle.

Cholecystotomy.—Biliary, renal, vesical, and other calculi are all associated with reciprocal correlations established between the mucosa and the irritating calculus. Rolleston thus describes the circle associated with gall stones:

Although gall stones are due to inflammation, of a comparatively mild character, of the gall bladder, their presence predisposes to fresh infection of the gall bladder, and thus to cholecystitis and to a vicious circle.[17]

Here the surgeon can remove the calculus that is perpetuating the morbid condition. The pathological sequences



THE BREAKING OF THE CIRCLE BY OPERATION.

are interrupted, and the mucosa returns to a more or less quiescent condition.

Thyroidectomy.—Another circle frequently broken by operation is associated with tracheal stenosis due to goître. When an enlarged thyroid compresses the trachea so as to greatly reduce the lumen, any unusual effort may interfere with the adequate supply of oxygen. Nature, in response, calls the supplementary respiratory muscles into action. But unluckily the contraction of these muscles, so beneficent in some respects, presses the hypertrophied thyroid further against the trachea so as to narrow the lumen even more than before. They thus increase instead of relieving the dyspnœa, which often ends in self-strangulation. In Fraenkel's words:

The sufferer gets into the clutches of a vicious circle. The greater the want of oxygen, the more vigorous and prolonged the muscular contractions; the more vigorous the latter, the greater the compression of the trachea and the less room for the admission of air.[18]

Here prompt relief can be given by thyroidectomy, which relieves the stenosis and arrests the dyspnœa.

Iridectomy.—Glaucoma is another grave disorder, which, in the words of Priestley Smith, "perpetuates and intensifies itself in a vicious circle." The correlations are thus described by Lawson:

The sudden raising of the intra-ocular pressure increases the congestion, to be followed in its turn by a serous exudation from the venous channels, with a consequent further increase of pressure, and thus a vicious circle is quickly established, with symptoms of ever-increasing violence.[19]

The iridectomy lowers the intra-ocular pressure, which would otherwise end in blindness.

Laparotomy.—Intestinal obstruction may be complicated by various circles, which the surgeon breaks by laparotomy. One of them is thus described by Nothnagel:

Paresis and paralysis of the bowel may appear very early in the course of peritonitis, especially in perforative peritonitis, where it is most probably due to reflex inhibition of intestinal peristalsis. Paresis gives rise to meteorism, since gas continues to collect and accumulate in the bowel, as it is not driven onward. . . As soon, however, as a considerable quantity of gas accumulates in the intestine, the vicious circle is completed, for gaseous distension of the intestine leads to further impairment of its muscular powers and eventually to over-distension and paresis or to definite paralysis.[20]

These few examples illustrate the principle of breaking the circle by attacking the *locum minoris resistentiae.*

TREATMENT OF SEVERAL FACTORS.

At other times it may be impossible to ascertain the weakest link in the chain. The wisest course is then to attack each of the factors concerned, at any rate in such complex conditions of disease as Amand Routh describes:

We have frequently to deal with a vicious circle, with local and constitutional states so interacting that no real improvement is possible until both the general and local states receive their due share of attention.[21]

Striking examples of this are met with where digestive disorders are associated with disease of other organs, whether as cause or consequence of the visceral condition. Thus Mitchell Bruce writes:

The pathological relations of the gastric disorder or catarrh and the diseases of the other organs are usually complex, a vicious circle being set up between them; and the stomach therefore calls for direct treatment as well as attention to the cause.[22]

If the practitioner cultivates the habit of thinking of disease as operating in circles, he will continually meet with illustrations of that interdependence of organs and of the importance of attacking each factor in the morbid process. His study of the art of breaking the circle will render his treatment more philosophical and more successful.

THE IMPORTANCE OF EARLY TREATMENT.

Lastly, since the circle is a self-aggravating process, it should be broken at the earliest moment. As Clifford Allbutt graphically says:

In vicious circles every gyration deepens the groove, an abnormal habit is formed so that arrest of such a local waste of energy and such a distress becomes more and more difficult. . . . The longer the "habit"—the fixtures of organic memory—the harder the impulse needed to "break the circle," for the habit has become independent of the original cause, which, indeed, had often vanished.[23]

Worthy to be kept in everlasting remembrance are the words of Ovid:

> Principiis obsta; sero medicina paratur,
> Cum mala per longas convaluere moras.

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THE TREATMENT OF MUSCULAR PARESIS BY MEANS OF ECCENTRIC MOVEMENTS.

BY

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THE treatment of conditions of muscular paresis by means of the so-called eccentric movements originated in Sweden; though widely used in Scandinavia and Germany, it is apparently little known in England.

The terms "eccentric" and "concentric" as applied to muscular movements are rather clumsy; but it is necessary to adhere to them, because they are in general use on the Continent. By a "concentric movement" is meant the ordinary movement of a muscle which does work while *becoming shorter*; on the other hand, a muscle is said to perform an "eccentric movement" when it does work while *becoming longer*. The significance of the terms arises from the fact that during concentric movements the ends of the muscle approximate more nearly to the muscle's central point; while during eccentric movements they become more widely separated from it.

To take a simple example: if a patient flexes his arm at the elbow-joint by means of his biceps, the biceps performs a concentric movement, for it does work while becoming shorter. If now a manipulator grasps the wrist of the patient's flexed arm, and gradually extends the arm at the elbow-joint while the patient resists the extension, the biceps performs an eccentric movement; for in resisting the extension at the elbow-joint, the biceps does work while becoming gradually longer.

The general rule for the performance of eccentric movements is that the manipulator first puts the muscle into its shortest position, and then gradually elongates it, while the patient resists the elongation.

In England, concentric movements are almost exclusively used in the treatment of paresis, the use of eccentric movements being very little known.

Paresis after Fracture.

The following case, however, shows that the little-used eccentric movements may be of far more value than the more ordinarily used concentric movements.

H. M., aged 11 years, suffering from wrist-drop due to fracture of the lower end of the humerus eight weeks previously. Callus, which had obviously interfered with the musculo-spiral nerve, was to be felt at the seat of fracture. The paralysis had been treated for four weeks, without effect, by means of electrical treatment and massage, and the limb had been splinted with the hand in the hyperextended position.

At the commencement of the treatment by eccentric movements the paralysis of the extensors of the wrist appeared at first sight to be complete. The hand hung limply in the position of extreme flexion; the extensors of the wrist were overstretched, and the power of raising the hand was completely lost. In such a case exercise of the extensors by the ordinary concentric movements was obviously impossible; the boy could not begin to raise his hand, so could not initiate the movement. Eccentric movements were here of high value. These were performed in the following manner: The manipulator first grasped the boy's hand, and raised it into the position of full extension, thus putting the extensors of the wrist into the shortest position; the manipulator then gradually and slowly allowed the hand to sink into the position of flexion, at the same time urging the patient to delay the fall of the hand. The hand did not fall completely "dead," thus showing that the extensors, when put into the shortest position, possessed a trace of contractile power in the way of resisting elongation, although in their overstretched position they had seemed quite powerless.

By repeating the described manœuvre, it was possible to exercise the extensors, with the result that rapid daily improvement took place, so that by the end of ten days the boy could hold his hand in a horizontal position. Thus treatment by eccentric movements for ten days produced a more marked effect than one month's previous treatment by massage, electrical treatment, and splinting in the hyperextended position.

At this stage the extensors were exercised somewhat differently. The boy held his hand in a horizontal position, and the manipulator pressed it down into the position of flexion, while the boy resisted the movement. Complete recovery of the power of the extensors took place more slowly, occupying several weeks, but was ultimately complete.

The above case illustrates the advantages of treatment by eccentric movements. In the first place, they enable the muscles to be exercised while still too weak to raise the weight of the limb; in the second place, it will frequently be found that a muscle which in the overstretched position appears quite powerless may yet, if put into its shortest position, give evidence of undoubted power in the way of resisting elongation. The concentric movements ordinarily performed bring the muscle into action in its longest or overstretched, and therefore least favourable, position; eccentric movements, on the other hand, bring the muscle into play in its shortest, and therefore favourable, position. Thus, by their means, it is possible to exercise a paretic muscle at the earliest possible moment, when it possesses only the smallest trace of contractile power. Herein lies the value of this treatment, for if a muscle can be got to contract physiologically, however feebly, the restoration of function will be far more rapid than can be brought about by merely passive manipulations.

In the case of wrist-drop just described, the delay in recovery was clearly not due to the continued pressure of the callus on the nerve, but was caused by some change in the muscles themselves, which was a sequel of that pressure, for it was only necessary to exercise the muscles for rapid recovery to take place.

Anterior Poliomyelitis.

In the treatment of the results of anterior poliomyelitis eccentric movements are of great service. It may be of interest, for the sake of contrast, to quote the description of the method usually employed in England, as given by Mr. Tubby:[1]

> When there is footdrop, or paralysis of the dorsiflexors, the attendant may gently press his hand against the sole, and encourage the patient to dorsiflex the foot.

It will be noticed that what is described is a concentric movement; it is open to the objection that in a severe case the movement could not be carried out because the paretic extensors would not be strong enough to raise the weight of the foot, and thus the patient could not initiate the movement. In such a severe case the value of eccentric movements would be evident, for by their means the extensors could be exercised long before they were strong enough to raise the weight of the foot. To perform them the manipulator would first bring the foot into a position of extreme dorsiflexion, thus putting the paretic muscles into their shortest position; he would then gradually allow the foot to drop, while the patient attempted to delay the fall of the foot. By this means even the smallest trace of contractile power could be utilized, and the muscles could be exercised at an earlier date—often many months earlier—than would be possible by the method followed in England.

Other affected muscles are dealt with on a similar plan. I frequently see cases of this condition, which had been treated without avail by massage and electricity, improve considerably under eccentric movements. It is worth noting that treatment by eccentric movements takes far less time each day than electrical treatment or massage—a matter of importance when numbers of patients have to be dealt with. All three methods may be well used in conjunction.

Facial Paralysis.

In facial paralysis a similar method is followed. In dealing with the muscles of expression, the manipulator first draws the affected muscle into its shortest position, and the patient attempts to hold it there, and this manœuvre is repeated. If, owing to paresis of the orbicularis, the eye can only be partially closed, the manipulator first draws the upper lid fully down by means of the forefinger; he then removes his forefinger, and the patient endeavours to delay the opening of the eye. Later, when the orbicularis possesses more power, the lid is first closed, and the manipulator then draws it gently upwards with the forefinger, while the patient resists the movement. Even in old-standing cases, this treatment is sometimes successful.

Paresis of the Upper Limb.

In treating the paresis of the deltoid which so often follows injuries to the shoulder, the manipulator first raises the affected arm to the horizontal; he then supports the arm by placing his hand under the patient's wrist; the manipulator then gradually lowers the arm, while the

patient endeavours to delay its fall. By this means the deltoid may be exercised while still too weak to raise the arm from the side.

Paresis of the short muscles of the hand and of the flexors of the fingers provide suitable cases for this form of treatment. As before, the muscles are first put into their shortest position and then elongated, while the patient resists the extension.

Mode of Application.

The question as to how often the movements should be performed is of importance. They should be performed from five to ten times at each sitting, and the sittings may be given once or twice daily. A common mistake is to exercise paretic muscles too frequently. If this is done, the muscles become exhausted and recovery is retarded, not hastened. The manœuvres must be performed slowly and carefully with a strength proportionate to the muscle's power.

The results obtained will obviously depend largely on the nature and causation of the paresis. In general terms, cases of lower-segment paralysis are better suited to this form of treatment than cases of upper-segment paralysis. In order that the treatment may be of benefit, the affected muscles must not be absolutely paralysed, but must possess some trace of contractile power. But it must be remembered that a muscle, which in its over-stretched position may appear absolutely paralysed, may yet possess latent contractile power which may be obvious in its shortest position. In general terms, it may be said that if a muscle possesses any contractile power at all, that power may be increased by the persevering use of eccentric movements. This holds good even in long-standing cases; in such cases possibly the result is obtained by the hypertrophy of individual muscle fibres.

As mentioned before, treatment by eccentric movements may well be used in conjunction with electrical treatment and massage. Percussions and vibrations may also be used, and in certain cases the limb may be splinted so as to prevent over-stretching of the affected muscles. The writer, however, considers that eccentric movements are the most valuable single measure in the treatment of paresis.

Theoretical Explanations.

I suggest that an explanation of the above phenomena is to be found in the microscopic structure of striped muscle fibre. Schäfer's[2] views on the histology of muscle are here followed, but are only given in bare outline; the division of the muscle fibre into sarcostyles and sarcomeres is omitted as not essential to the present question.

A striated muscle consists of fibres each of which is marked by transverse bands of alternate light and dark material. According to Schäfer, the dark bands are made up of longitudinal channels or tubules arranged parallel with the long axis of the muscle fibre. Each such channel or tubule is closed at one end (line of Hensen), but at its other end opens by means of a minute pore towards the light band, which is composed of clear translucent material. In Schäfer's view, when the muscle contracts, the translucent material of the light band flows or is drawn into the channels of the dark band, and becomes hidden from view. By this means each individual channel of the dark band becomes shorter and wider, and by the sum of similar processes shortening and widening of the muscle fibre occurs. The evil effects of over-stretching on a muscle may now be considered in the light of this minute structure.

Mr. Robert Jones[3] has recently emphasized the injurious effects of over-stretching. He suggests that it has the effect of causing the nerve cells to become inactive, though not extinct. I put forward the view that the evil effects of over-stretching have nothing to do with the nervous apparatus of the muscle, but have their origin in certain changes produced by the stretching on the muscle itself.

When a muscle fibre is over-stretched its sheath (sarcolemma) is brought into a state of tension, causing lateral compression of its contents. By this lateral compression the longitudinal channels which compose the dark bands will be compressed one against the other, and this will have the effect of obstructing the orifices of the minute pores through which the translucent material gains entrance to the channels. This affords a simple mechanical explanation of the ill effects of over-stretching; for since the ingress of the translucent material into the channels of the dark band is impeded, so also will physiological contraction of the muscle be hindered or prevented, even though the nervous mechanism of the muscle may be intact.

The same considerations explain why a muscle, which appears functionless when over-stretched, can yet exhibit contractile power when put into its shortest position; for in the latter position the sheath of the muscle fibre is relaxed, the channels of the dark band do not press on one another, and therefore their pores will be unobstructed and the ingress of the translucent material easy.

It will also be clear why physiological contraction is so important in the treatment of paresis, for it is the only means of causing ingress and egress of the translucent material to and from the channels, passive manipulations being powerless to effect this. The rapid improvement that sometimes takes place in a paretic muscle as the result of exercise (as in the case of wrist-drop quoted above) may be explained by supposing that through disuse the entrances to the channels may become clogged, and possibly the translucent material altered in consistence. A few physiological contractions may serve to clear the entrance to the channels, and thus bring about rapid improvement in the muscle's power.

Conclusions.

1. In order to perform eccentric movements, the manipulator first brings the affected muscle into its shortest position and then gradually elongates it, while the patient resists the elongation.

2. Such movements are of more value in the treatment of paresis than the more ordinarily employed muscular movements.

3. The explanation of the effect of such movements is to be found in the microscopic structure of striped muscle.

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[1] Tubby, *Deformities, including Diseases of the Bones and Joints*, vol. ii, p. 615. [2] *Gray's Anatomy*, seventh edition, p. 38. [3] Robert Jones, British Medical Journal, December 9th, 1911, p. 1520.

RAYNAUD'S SYNDROME AND SYPHILIS.

BY

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It would appear that Sir Jonathan Hutchinson was the first to call attention to the relation of syphilis to certain cases of Raynaud's disease,[1] so that the idea of their possible association is by no means new. Since his paper (1889) there have been an ever-increasing number of reports of similar cases, and the occurrence of one in the out-patient department at the Great Northern Hospital, which Dr. Whitfield has kindly allowed me to make use of, and was the subject of an animated discussion at the Dermatological Section of the Royal Society of Medicine,[2] must be my excuse for once more calling attention to the importance of recognizing not only the syndrome which Raynaud described, but still more to the vital necessity, from the patient's point of view, of tracing to its ultimate cause or causes the etiology of the condition.

Inasmuch as the physician has in a majority of cases only the clinical evidence to go upon, it would be better to look upon Raynaud's disease, not as a disease *sui generis*—a tendency which is undoubtedly still generally prevalent—but rather as an associated clinical picture, a symptom complex, dependent, perhaps, on a variety of factors in which the angiospastic conception of Raynaud plays only a part, and for which some organic and structural change of the vascular system concerned is mainly responsible.

The case referred to is that of a woman aged 56, who has suffered for over seven years from symptoms which Raynaud would have called typical, and which in the present attack have terminated in gangrene (of the dry type) of the tips of the thumb, first, fourth, and little fingers of the left hand, and in local syncope as evidenced by cyanosis of the third left finger, and of the digits of the right hand. In none of these situations is more than the pulp of the distal phalanx involved, and the

nails, though scored by transverse dystrophic lines, the evidence doubtless of past attacks, show no tendency to separate at present.

There are no symptoms of Raynaud's syndrome elsewhere, although there is a history of a similar asphyxial affection of the toes, ears, and nose, without gangrene.

As far as can be ascertained there has never been haematuria, and at the present time there is nothing abnormal in the urine.

The Wassermann reaction is positive.

The present attack began in the early part of September, 1912, when intolerable aching of the arms (a not unusual symptom in acroasphyxia of the upper extremity) first brought her to the hospital. On September 18th she presented herself, with gangrene well advanced, and although she had been taking mercury (hyd. c cret.) and iodides since the Wassermann reaction had proved positive, and had entirely lost her pain, the gangrene had supervened notwithstanding.

The points of importance in this case are the following: The woman can recall nothing suggestive of a syphilitic infection. She has had five children, one of whom died in infancy from bronchitis, and another at 9 years from lymphadenoma. There have been no miscarriages, and her husband, though not living with her, is alive and well.

It seems plausible to suggest that a more energetic antiluetic treatment (as, for example, salvarsan injection), commenced on the day the result of the Wassermann reaction became known, might have entirely prevented the onset of gangrene, and it is with the object of urging this procedure in similar cases that I have appended the following cases from the literature:

CASE I.—The symptoms were engrafted on hereditary syphilis in a boy, aged 4, who is reported by Krisowski[3] in an exceedingly able article (1895), in which he takes an identical view of the position of Raynaud's syndrome, to have been the victim of a symmetrical gangrene involving the tips of the ears. The condition was very quickly brought under control by administration of iodides and energetic inunctions of mercury; but, of greater importance still, it never relapsed thereafter, in spite of intentional exposure of the child to cold weather, which had in previous years always brought about an attack of local syncope, thus proving that an essential factor in the production of the syndrome had been removed.

Krisowski took the view, and in that he was considerably ahead of his contemporaries, that the Raynaud syndrome is the product of at least three factors: (1) A disease which produces an organic structural change in the blood-vessel wall, and of all diseases syphilis is probably the most potent in this respect; (2) some poisonous substance or toxin which is able to produce spasm of the arterioles; and (3) the external influence of cold. Patients with Raynaud's disease are notoriously worse in winter, and the most exposed parts—namely, the ears, nose, and fingers—are those most subject to syncope and gangrene.

In his own case he removed, by his energetic inunctions of mercury, probably the whole of factor (2), and considerably alleviated the first. The third factor then, unsupported by the other two, became impotent, and the child was able to run about out of doors in all weathers.

Whether this attractive hypothesis is indeed the true explanation of certain cases of Raynaud's disease must be left at present undecided; it is sufficient if it forms the basis of therapeutic measures; and whether the first and second factors be syphilis (congenital or acquired) or, as has been claimed at other times, tuberculosis, rheumatism, malaria, and gout, the true underlying etiological causes should always be sought for, and such remedial measures as massage, galvanism, etc., relegated to a position of secondary importance.

CASE II.—Gaucher[4] recently showed a young man who developed the symptoms of symmetrical acroasphyxia one month after the appearance of a chancre and a fortnight before the eruption of the roseola. The symptoms were typically spasmodic and involved the index, middle, and ring fingers of both hands, which during the crisis became painful and lost their tactile sensibility, whilst at the same time the distal phalanges were objectively observed to change their tint through red and violet to black. Cold water accentuated the syndrome, and stimulating lotions and friction relieved it. The condition completely cleared up in one month from the commencement of biweekly mercurial injections and did not recur.

CASE III.—At the same meeting Brocq[4] reported a similar case in a congenital syphilitic, aged 30, in whom the condition had gone to gangrene of the toes of both feet after a prodromal history of Raynaud's disease lasting over several years. This case was also cured by iodides and mercurial inunctions.

Both these cases are interesting in that they are definite proofs of the possible association of both congenital and acquired syphilis (even in its secondary stages) with the complex of symptoms described by Raynaud, and in themselves justify the examination of the blood for the Wassermann reaction in every case the etiology of which is at all doubtful.

In the American literature also the association of syphilis with the syndrome has not escaped observation:

CASE IV.—In 1906 Lustgarten[5] showed a case of a young man who had had Raynaud's symptoms for two years, culminating in gangrene of the finger-tips. It does not appear that Wassermann's reaction was sought for (the test was published in the same year) in this case, but there was a suspicion of luetic infection in the history, and "leukoplastic patches" in the mouth supported the presumption. Under antiluetic treatment the pains were cured, but, as in my case, the gangrene was not arrested. Salvarsan was not in use at that date.

His demonstration was followed by the relation of three similar cases in his practice by Dr. Klotz. All three had shown the coldness and blueness of fingers with superficial necrosis of the tips, and they had entirely lost their symptoms under mercury. Two of them had remained well for years. In the discussion at this meeting the pathology of the condition was held to be an endarteritis obliterans of many small arteries of an ascending type. Exception has been taken to such a view on the ground of its unlikely manifestation in so symmetrical a fashion, but, if it be remembered that syphilis is undoubtedly a constitutional disease and that evidence is rapidly accumulating that the organism, in one stage at least, is present in the circulating blood, the difficulty in accepting the premise should vanish.

The literature on Raynaud's disease is exceedingly voluminous, and it has been found impossible to do more than select for my purposes just those cases in which the etiology of syphilis was undoubted. But those are not the cases which are commonly met with in practice or in the out-patient departments of hospitals. If Raynaud's syndrome can be caused by florid syphilis—and of that there would seem to be no doubt—it would be very difficult to disprove its inability to produce the same train of symptoms at later and less obvious stages, and therefore I would urge that in every case of the syndrome Wassermann's test should be applied; that the physician should not be satisfied with one negative result, but should institute a second inquiry at some interval of time, with or without a provocative injection previously of salvarsan or mercury. As far as I am aware, salvarsan has not as yet been administered in these cases, but in view of the vascular involvement and the occasional concomitancy of haemoglobinuria, which is now admittedly in its paroxysmal variety often found associated with a positive Wassermann reaction, the intravenous injection of the drug should prove a valuable adjunct to the treatment of the condition.

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IN a paper read at a meeting of the British Medical Association at Capetown last October, Dr. Bayon summed up the present position of leprosy research. He believes that the isolation and artificial cultivation of Hansen's bacillus has at last been successfully achieved, and the definite etiological relationship of the culture to leprosy conclusively established by morphological examination, animal experiments, serological tests, and by the observation that a specific reaction follows upon an injection of a filtered cultural extract. The micro-organism of human leprosy only reaches its bacillary acid-proof stage after injection into animals, but retains these properties in further artificial cultures. Vaccine treatment by killed cultures is not to be recommended in leprosy because the bacilli remain absolutely quiescent in the tissues, and the production of antibodies does not follow. Bayon said that the existence of an insect vector of the disease has not been established, and expressed the belief that investigation on these lines should be preceded by the acquisition of a thorough knowledge of the complete life-cycle of the micro-organism in man and rats, and the similar bacteria found in cattle and horses.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF VERONAL POISONING.

THE following case may be of sufficient interest to merit publication, as the lethal dose of veronal is a disputed point.

At 11.30 p.m. on January 21st, 1913, I was called to see a case of supposed poisoning. I found the patient, a retired prize-fighter, aged 36 years, in bed, fully dressed except his boots. His wife said he had taken some drug to make him sleep, that he had been sleeping all day, and that they could not wake him. A lodger told me he thought veronal had been taken, and gave me a bottle containing ten tablets, each 0.5 gram. The patient was pallid, the hands cold and clammy, and the pulse 72, very soft and feeble, and difficult to count. The breathing was semi-stertorous. The pupils were not dilated, but did not react to light; this puzzled me until I found out that the patient had been for years an habitual chlorodyne drinker and had been taking it heavily for some weeks. I was told he was "just as you see him" for about twenty-seven hours.

All my efforts to wake him having failed, I gave at once a hypodermic injection of strychnine and digitalin and in a quarter of an hour one of strychnine alone. As the pulse and appearance of the patient were improving steadily, I used a small-sized siphon rubber stomach pump and washed out the stomach. I only passed the tube with considerable difficulty, after having well warmed and oiled it. Using a weak solution of sodium bicarbonate, I got away a lot of flocculent material and mucus. After passing in half a pint of strong black coffee and 2 oz. of brandy and finding it retained, I contented myself with occasional hypodermic injections of strychnine, strychnine and digitalin, and oleum camphorae. The latter, in 20-minim doses every quarter of an hour, I firmly believe in; it keeps the heart going, and an overdose is impossible.

About 1.30 a.m. on January 22nd (after over two hours' treatment) I fed the patient by nasal tube, giving bovril and brandy. In about an hour he opened his eyes, after a "shake and shout," and since then his recovery has been uneventful.

The interest in this case lies in the following facts, which I carefully verified:

1. He had taken chlorodyne for some years, and for one week preceding January 20th took 2 oz. of Collis Browne's preparation daily. Between 5 and 6 p.m. on that date he emptied the bottle, taking 150 drops, all that was left. Fearing he could or would not sleep, he remembered the veronal bottle. This, which had been in his possession about one year, had been given to him by a man who cleaned out the rooms of a poor fellow who died from veronal poisoning. The patient took three tablets every quarter of an hour between 7 p.m. and 8 p.m., and after taking the last lot he felt dizzy, and had just time to drop into bed as he was, dressed.

2. The chlorodyne was taken to relieve pain in his stomach, and also a feeling as if "his stomach was dropping out," which he had felt for years as the result of the heavy blows he had received in that region in the prize-fighting ring.

3. The remaining tablets weighed, on the average, 8½ grains each. Allowing for excipient the amount of veronal present would be 7½ grains. The dose on the label was 0.5 gram. This would mean that the patient took 5 grams, or just over 92½ grains.

4. The bottle of tablets, which originally held twenty-five, had been opened one year previously and three taken out. Can veronal deteriorate in one year so that 92 grains of the "aged" drug cannot be reckoned as a poisonous dose? I have looked up all the literature I could find without satisfactory result. The poisonous dose appears doubtful, and its stability is not mentioned.

5. The patient's wife states that he had had no food for two days. I questioned her closely as regards this, and she stated "he would take nothing, only dose and sleep, wake and dose." Absence of food in the stomach confirms this.

6. Could the veronal and chlorodyne (150 drops one hour previously) have any counter-effect and thus save the man? The patient has more than once confirmed his statement as to how and when he took the drug. The splendid physique and stamina of the man no doubt stood him in good stead, and the fact that he had been a total abstainer all his life.

Hampstead, N.W. ERNEST A. RONALD LAING.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

MANCHESTER ROYAL INFIRMARY.

A CASE OF GASTRIC HAIR BALL.

(By S. B. RADLEY, M.B., B.S.Lond., M.B., Ch.B.Vict.)

FOR courteous permission to report the following case I am indebted to Professor William Thorburn, under whose care the patient remained during her stay in hospital:

The patient, a female, aged 21, was admitted on December 21st, 1911, complaining of a "lump" in her abdomen, which she had noticed for some months, and with a history of diarrhoea of some months' duration. She had never vomited, though she had suffered a good deal from wind and distension. Her appetite was quite good, and there was no feeling of distaste for certain kinds of food. No history of pain after food could be obtained, and indeed she had not been troubled with pain at any time beyond the discomfort associated with the flatulence and distension after meals. There was no history of haematemesis or melaena. The patient stated that she had lost weight latterly, but this was not marked. No history of peculiar dietetic habits could be obtained.

Condition on Admission.

On examination the patient appeared undersized and poorly developed for her age. She presented a somewhat infantile character, mammary development being almost *nil*, and the axillary and pubic hairs scanty. The general skeletal development was less infantile than these remarks would suggest. The state of nutrition was quite average.

The abdomen showed some general fullness. A distinct swelling could be seen in the left epigastrium, moving from under the left costal margin on inspiration. The mass was quite hard and nodular, and in size rather larger than a hen's egg. It was not tender. It was movable to a limited degree in the abdomen. The liver, kidneys, and spleen were not palpable.

Operation.

A laparotomy was done by Mr. Thorburn. A median incision was made in the epigastrium, and on inserting the hand into the abdomen the swelling was found to be contained in and formed by the stomach. The stomach was drawn up to the wound, and the tumour was found to be inside the gastric cavity and to fill it completely. An incision about 3 in. long was made into the stomach in a horizontal direction and the hair ball was extracted. The stomach was then closed with Lembert sutures and the abdominal wall sewed up in layers.

The patient made an uneventful recovery. The sutures were removed on the tenth day, and the patient left the hospital in three weeks.

Shape of the Ball.

The accompanying illustration gives a good idea of the shape of the hair ball. It is a perfect replica of the shape of the stomach, the muscular wall of which was contracted down on to it. It is a really noteworthy example of the shape of the full or nearly full stomach. It shows quite well the incisura angularis, the pyloric vestibule (which sags rather low), and the well marked off pyloric canal. Its dimensions were as follows:

Lesser curvature	5½ inches
Greater curvature...	14 ,,
Longitudinal diameter	6½ ,,
Circumference of body (mid-point)	7⅜ ,,
Circumference of pyloric antrum ...	8¼ ,,

(The weight in the dried condition was 11½ oz.)

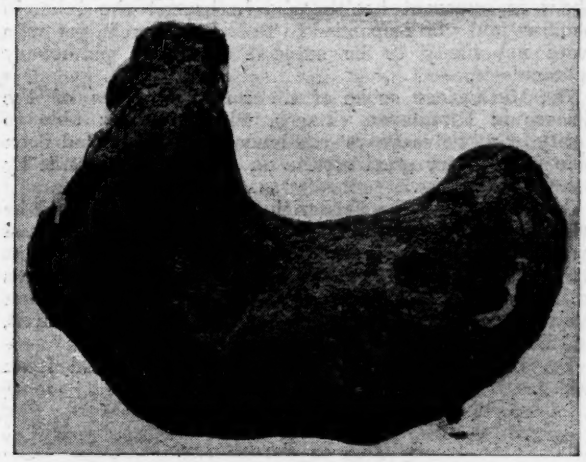
In appearance it was of a dull brownish-grey colour, composed of masses of hair fibres twisted and squeezed into a solid body, with a coating and admixture of mucus and food débris between the fibres of hair. It subsequently transpired that the hair composing this mass had been obtained indiscriminately from the hair-clad regions of the body, this accounting for the sparseness of hair noted above. The long hairs—the greater number—which held the mass together, were derived, of course, from the scalp, whilst the plentifully interlaced shorter ones were of axillary and pubic origin. When taxed with her evident habit she admitted its existence on and off for several years.

REMARKS.

The diagnosis of the condition presented, of course, many difficulties, particularly as the patient denied absolutely the possibility of the presence of a foreign

body. No skiagram was taken or bismuth meal given owing to the absence of any marked history of dietetic upset or idiosyncrasy. Mr. Thorburn was, however, strongly impressed with the resemblance of the clinical signs and symptoms to a case of hair ball on which he operated some few years previously. An infinite variety of foreign bodies may be found in the stomach, some of which have been swallowed by the insane, in other cases by accident, and occasionally by people of a hysterical or degenerate type. To this list we must add people such as this girl whose case is now recorded—a girl without the classical hysterical stigmata but whose nervous balance is evidently in an unstable condition.

The absence of vomiting and the normal appetite are two of the outstanding features of this case. That the stomach should be able to perform the functions normally, that peristalsis should be apparently healthy and well co-ordinated is a very striking thing. In view of the recent work of Cannon and Washbourne on hunger, the fact that appetite should be normal is very interesting, whilst the feeling of fullness and flatulence after meals appears to be quite natural, though not inevitable, this condition being dependent rather upon how much gas is present in the stomach than upon the degree of "fullness" from solid contents. When one considers what a great obstacle a hair ball of such a size must have been to the performance of the gastric functions, it is surprising that



the "ball" was not expelled by the stomach when yet small enough to pass the pylorus.

In Mr. Thorburn's previous case loss of weight and vomiting were marked features, though the "ball" was only about the volume of a kidney. In the present case, despite the increased size of the foreign body, these symptoms were inconspicuous.

Butterworth gives an exceedingly interesting account of hair ball, and reports a full bibliography. At the time of writing (1909) there were 42 cases in the literature. The largest "balls" on record are one of 5 lb. 3 oz., which we believe is in the Museum of the Royal College of Surgeons of England, and that of Mermet d'Hautville, which weighed 6 lb. in the fresh condition and 2½ lb. when dry.

I wish to take the opportunity to express my indebtedness to Mr. G. Jefferson, F.R.C.S., for the assistance he has rendered me in the bibliography of the subject.

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THE twelfth congress of the German Society of Orthopaedic Surgery is announced to meet in Easter week, on Thursday, March 25th, 1913, at the Langenbeckhaus, Ziegelstrasse, Berlin. The chief subject selected for debate is the treatment of chronic arthritis (arthritis deformans). Dr. Friedrich Kraus, Geheimrat, will introduce the discussion, with observations on symptomatology, pathogenesis, and internal therapy; Dr. Ibrahim of Munich will read notes on chronic arthritis in childhood; and Dr. Preiser of Hamburg will read a paper on the orthopaedic treatment of that disease.

Reports of Societies.

LIVERPOOL MEDICAL INSTITUTION.

Thursday, January 23rd, 1913.

Mr. ROBERT JONES, F.R.C.S., President, in the Chair.

Fracture of Neck of Femur.

MR. RUSHTON PARKER read a note on fracture of the neck of the femur, and showed specimens from two aged subjects, with lantern slides. The first patient was 82 years of age, and died ten days after the injury. The second was 72, and died ten weeks after the injury. The specimens showed true bony union. Mr. Parker said he preferred to treat them on a "Thomas" hip splint, though in some cases the "Thomas" knee splint answered.

The PRESIDENT said the specimens were worthy of attention, as the possibility of bony union was denied. In making the initial diagnosis an injury to the hip which produced eversion of the foot and some loss of power in the leg was quite sufficient. In treating these cases he used extreme abduction of the injured limb. By this means the broken surfaces were turned on to each other, muscular tension was released, and if an angle of 45 degrees were obtained the neck of the femur was fixed against the acetabulum. He reduced displacement by pulley or manual extension, then abducted the limb with the knee flexed. The limb was fixed in a special abduction frame, or where an injury occurred out of reach of apparatus good fixation could be obtained by plaster-of-Paris. Fixation should be kept up for at least two months, usually three months. Massage and passive movements were important; the patient could be trained to move the limb in the abducted position. In cases in which deformity had occurred and the limb was abducted with eversion he forcibly abducted the limb under an anaesthetic and kept it fixed for ten days, and then massaged.

Acute Yellow Atrophy.

Dr. NATHAN RAW read a note on seven cases of acute yellow atrophy of the liver, which demonstrated the relation of the disease to syphilis. All 7—namely, 4 males, of the ages of 23, 15, 40, and 27, and 3 females, 17, 23, and 26 years of age—had suffered from syphilis. In 4 of the cases leucin and tyrosin were demonstrated in the urine. The youngest of the female cases was pregnant.

Rectal Carcinoma.

Mr. K. W. MONSARRAT read a paper on carcinoma of the rectum. In choice of the operation to be performed it was necessary to consider the extent of removal required. Where the edge of the growth was defined and limited he had not been able to trace with the microscope the changes which had been described by another observer beyond the actual naked-eye growth. The inguinal glands were not liable to be infected except in cases involving the anal margin. As the peritoneal surface might be invaded, an abdominal section should be performed as a preliminary in all cases to make sure of this point. There was no necessity to remove any great length of bowel beyond the growth. In most cases he thought an inguinal artificial anus satisfactory. There was no doubt that the mortality from the operation was serious. He had lost 3 cases out of 13—2 from sepsis, 1 from syncope three months after.

Mr. F. T. PAUL said it was thirty-five years since he had first removed a rectal cancer, and he had found that the growth did not extend far in the length of the bowel. The microscope showed practically no infiltration beyond the naked-eye margin of the growth. He found that a sacral anus was more satisfactory than an inguinal anus, while a perineal anus was unsatisfactory. He did not consider an abdominal incision necessary. He did not think high and fixed cases, especially if involving the bladder, worth the risk of removal of the growth, especially as cases might live for years after an inguinal colotomy alone.

Mr. R. W. MURRAY thought the operation unsatisfactory, and even went so far as to believe these cases were best left alone until a colotomy had been performed. He had seen a large number of cases in Vienna, some of which

had been undertaken fourteen years ago, and he had been unfavourably impressed with the results of the formation of a sacral anus. He thought an inguinal anus the least harmful.

Mr. Damer Harrisson and Dr. Nathan Raw also took part in the discussion.

MEDICAL SOCIETY OF LONDON.

Monday, January 27th, 1913.

Sir W. Watson Cheyne, President, in the Chair.

Exhibition of Clinical Cases and Pathological Specimens.

The following were among the exhibits: Dr. F. Parkes Weber: (1) A case of *Splenic anaemia* in a woman aged 30. Dr. Weber believed that the case was one of a clinical group of cases of "splenic anaemia" in adults which improve under arsenical treatment and do not necessarily develop into typical cases of "Banti's disease" with hepatic cirrhosis and ascites. (2) Case of probable *Tertiary visceral syphilis* with pyrexia and extreme cachexia. The patient, a woman aged 43, had been previously shown as a case of acquired chronic acholuric jaundice, with a blood picture resembling that of pernicious anaemia. There had been acholuric jaundice and splenomegaly, but no excessive fragility of the red blood corpuscles. Dr. J. L. Bunch: (1) *Lupus erythematosus* in a girl, aged 14, benefited by carbon dioxide snow; and (2) a case of *Syphilide resembling tubercle* in the neck and upper part of the thorax in a young woman. Mr. Paul Roth: A boy, aged 8, on whom he had successfully performed *Transperitoneal uretero-lithotomy*. The stone was oval, its diameters being $\frac{5}{16}$ and $\frac{7}{16}$ in. Mr. W. H. Clayton-Greene: *Hair ball removed from the stomach* of a young woman, aged 23. Abdominal pain and vomiting had been accompanied by a large gastric tumour. This proved to be a hair ball, which extended from the cardia to the jejunum and formed a cast of the stomach and duodenum. Also a specimen of an enormous *Mucocele of the appendix*, which had formed a large iliac tumour. Dr. Langmead: Suprarenal glands from a case of *Addison's disease* in a boy of 10. They were almost entirely tuberculous. It was brought forward on account of its great rarity in children. Dr. P. S. Lukis: *Acholuric jaundice* in a boy, aged 6½ years. The spleen and liver were enlarged, and the blood showed undue fragility and reticulation of the red blood cells. Mr. A. E. Rayner, for Mr. C. A. Ballance: A case of *Bony tumour of the femur*, in which the question arose as to whether it was a simple osseous tumour or an osteo-sarcoma.

ROYAL SOCIETY OF MEDICINE.

Section of Medicine.

Tuesday, January 28th, 1913.

Dr. Frederick Taylor, President, in the Chair.

Records of King Edward VII Sanatorium.

Dr. Noel D. Bardswell read a paper containing an analysis of 1,079 patients discharged between July, 1907, and July, 1911. In 1,027 of these cases the diagnosis of the disease was confirmed in the sanatorium, leaving only 52 not so confirmed. The bacilli were discovered in the sputum of 82.7 per cent. Of the 1,027 definite cases, 112 had been lost sight of and could not be traced; the remaining 915 had been traced up to October, 1912; 764 of the latter number had the bacillus on admission; in 151 no tubercle bacilli were found at any time. In 1912, 57.1 per cent. were well or alive, 42.8 per cent. dead. Dr. Bardswell presented the figures separately according to the stages of the disease. The condition in 1912 of the 151 in whom no bacilli of tubercle were found was as follows: 88.7 per cent. were well or alive; 11.2 per cent. were dead. Of the 764 in whom tubercle bacilli were found, 148 (19.3 per cent.) lost their bacilli before discharge. Of these 148, 124 were well or alive in 1912—that is 83.7 per cent. In 1912, of the 616 with tubercle bacilli present on both admission and discharge, 313 (or 50.8 per cent.) were well or alive, 303 (or 49.1 per cent.) dead. The author laid great stress on the criterion of diagnosis being the actual discovery of the bacillus in the sputum; once that was departed from, all kinds of elements of uncertainty could enter to modify the figures and therefore a right conception as to the efficacy of curative measures.

Dr. Hartley commented on the large percentage of cases in which the tubercle bacillus was found, and asked whether intensive methods were employed. It was a pity that so large a number as 112 could not be traced.

Dr. Acland spoke highly of this valuable contribution, especially when there was so much inaccurate statement and unjustifiable deduction prevalent as to the disease. He hoped definite evidence would soon be forthcoming as to the relationship between the cutaneous reaction and the complement-fixation test in tuberculosis.

Dr. Cecil Wall suggested the addition of one or two tables, including one giving the average expectation of life for the different ages dealt with, apart from tuberculosis, because many of the patients might presumably have been dead from other causes by the same date if they had not had the disease. It would also be of great value if Dr. Bardswell would draw up a table giving the duration of the disease from the date when the patient definitely felt unwell. The anatomical classification was not a reliable index to prognosis; a consideration of intensity of symptoms was much more informing.

Dr. Parkes Weber agreed that the only safe criterion to take was the presence or absence of the tubercle bacilli in the sputum. Moreover, there were many persons going about in apparent health who harboured the tubercle bacillus, and who responded to tests for tubercle, yet who were not likely to be subjects of active pulmonary tuberculosis.

Dr. McCulloch spoke of the rarity of cases of the disease in Himalayan villages, which he was able to verify by a twelve years' residence there. He had been able to get very good results on tuberculous glands by *x*-ray irradiations.

The President (Dr. Frederick Taylor) said it would be instructive if any one could compare the modern results of treatment of the disease with those of thirty years ago, at which latter period, no doubt, cases taken from the slums to the wards of a general hospital and given food to which they had long been strangers, left very much improved, and their fever and cough abated.

Dr. Bardswell replied, and promised to add fresh tables.

Section of Psychiatry.

Tuesday, January 28th, 1913.

Sir George H. Savage, President, in the Chair.

Insanity and the Neuropathic Inheritance.

Dr. F. W. Mott read a paper on this subject. He said there were individuals born of sound mental and physical stocks that no acquired conditions, such as disease, drink, and poisons, either engendered within the body or taken from without, nor head injuries, emotional shock, distress, and even combined misery and destitution, could render insane. There were others, in most cases subjects derived from a neuropathic stock, whose mental equilibrium might be disturbed by any one of these conditions, or even without any apparent cause, except the physiological conditions appertaining to the functions of the sexual glands. Between these two extremes all gradations of mentality were found, from the congenital imbecile and the insane adolescent dement at one end of the scale, to the potentially sound mind and body which no combination of acquired conditions could render permanently insane. Every case of insanity should be regarded as a biological problem, and the study resolved itself into the acquirement of a knowledge of what the individual was born with—Nature—and what had happened after birth—nurture. The former could be ascertained by a study of the ancestral stocks. The neuropathic tendency might be differently manifested in different members of the stock. Just as bodily features were transmitted from one generation to another, so was temperament. Special racial and family characters were of later development, therefore were far less fixed, stable, and organized in the nervous system. Galton found that twins developed from one ovum, and therefore identical germ plasm, living in a different environment, remained similar in temperament and

character, whilst binovular twins, brought up and living in the same environment, remained dissimilar. Galton also made a statistical inquiry into the inheritance of good and bad tempers, and concluded that one set of influences tended to mix good and bad at haphazard, another tended to assimilate them, another tended to divide families into contracted portions; and in that way there was a tendency to revert to the normal average of the race. Morel had pointed out that nervous irritable weakness and neurasthenic predisposition might be the first evidence of degeneration of a stock. The signs of degeneracy might be manifested as self-centred narrow-mindedness in religious beliefs, fanaticism, mysticism, spiritism, and unwholesome contempt of traditional custom, social usages, and morality, a vain spirit of spurious art and culture, a false, self-loving vanity in the pursuit of a sentimental altruism, the intelligence being well preserved. Such qualities might be combined with latent or active genius; but the brilliant intellectual qualities of a degenerate were generally associated with either a lack of moral sense or of sound judgement and higher control. Dr. Mott declared that the world's history had been made by men who were either epileptics, insane, or born of a neuropathic stock: Alexander the Great, Julius Caesar, Napoleon, Peter the Great, Frederick the Great, Pitt, Earl of Chatham, Mahomet, the Apostle Paul, Martin Luther, Emanuel Swedenborg, and others. Among English poets, Cowper, Wordsworth, Byron, Gray, Burns, Chatterton, Thomson, were either insane or possessed the neuropathic temperament. The author then proceeded to describe the work which had been done in the pathological laboratories of the London County Asylums on heredity in relation to insanity, chiefly by means of a card system which he instituted four years ago concerning no less than 1,450 families, the total number of cases inquired into having reached 3,118. That showed the following facts: (1) In the insane offspring of insane parents daughters were much more numerous than sons. (2) Amongst the insane members of the same family (brothers and sisters), sisters were more numerous than brothers, which fact might be usefully correlated with the further fact that there were more women in asylums than men. More than half the residents of the London County lunatic asylums had been resident there more than ten years. Among the reasons for the preponderance of women inmates were that general paralysis, which was three times more frequent in men than in women, was a fatal disease; again, women were more likely to be insane because of the physiological emergencies connected with reproduction. Moreover, women had a more unstable nervous system or mental equilibrium. To those factors must be added, in his opinion, the enforced suppression, by modern social conditions, of the reproductive functions and the maternal instinct in women of emotional temperament. The author then proceeded to establish the principle of anticipation or antedating, and Nature's means of mending or ending degenerate stock, showing a number of pedigrees, one of which exhibited the elimination of unsound elements in a stock in which there was a dual insane inheritance. It was generally admitted that in the pedigrees of general paralysis of the insane the neuropathic taint was not found to anything like the extent that it was in the pedigrees of patients suffering from neuroses, psychoses, and feeble-mindedness. This was not surprising, seeing that general paralysis was an organic disease due to the action of the syphilitic organism. He had been able to support his contentions by the investigation of upwards of 3,000 relatives of persons admitted into the London County asylums.

Dr. WHITE demonstrated a number of very instructive pedigree charts, and the manner in which the data were ascertained. It seemed to be the general rule that the abnormality on the mother's side was greater than that on the father's side.

Sir GEORGE SAVAGE (President) referred to some cases within his experience in which a man, after a head injury, slowly became weak-minded, and the children begotten after it were also weak-minded. He also spoke of the alternation of neuroses, gout or asthma alternating with insanity in several cases he had seen, while glycosuria and insanity were said to behave in the same way. Diabetics sometimes had insane or epileptic offspring. Marriage between offspring of degenerate parents was not such a serious matter where the contracting parties did not themselves show a neurotic taint as where that did exist. This presence or absence of a neurosis also entered largely into the question of whether cousins should marry.

Dr. ROBERT JONES (Claybury Asylum) said he took the histories of 100 cases of general paralysis, and found that in 28 per cent. there was a history of paralysis of some kind in the progenitors, in some of whom it was called "spinal paralysis"; but he knew that in others it was general paralysis. And there was a history of some member having been insane in 38 per cent., while in 18 per cent. there was a history of drink in the parents; 12 per cent. gave a history of epilepsy, and 31 per cent. a history of tuberculosis. He considered that disorders of the ductless glands were responsible for much insanity. He believed in the transmissibility of general paralysis of the insane.

Dr. HYSLOP pointed out the protean character or conditions grouped as insanity, and the fact that in some cases the condition was due to a gross physical defect in the thyroid gland, for example; and he counselled caution in applying Dr. Mott's statistics in too sweeping a manner.

SECTION OF THE HISTORY OF MEDICINE.

A MEETING of this Section was held on January 29th, Sir WILLIAM OSLER, Bart., F.R.S., President, in the chair. Sir W. T. Thiselton Dyer, K.C.M.G., F.R.S., the Right Rev. Francis Aidan Gasquet, D.D., O.S.B., A. Rudolf Hoernle, Charles Louis Taylor, H. S. Wellcome, and Sidney Young, F.S.A., were elected Corresponding Fellows as "persons who have distinguished themselves in the subjects for the study of which the Section is established."

Medical Allusions in the Writings of Francis Bacon.

Dr. STEEVES read a paper upon medical allusions in the writings of Francis Bacon. The subject was considered under the following heads: (1) Bacon's mental attitude towards the profession, and the duties pertaining to it. (2) His views on public and domestic hygiene. (3) Remarks on disease in general and special diseases. (4) Medicines and special medical applications. (5) The special senses. (6) Generation; decay and death. The paper was discussed by Dr. RAYMOND CRAWFURD and Dr. LEONARD GUTHRIE.

Plague Banners.

Dr. CRAWFURD showed some plague banners by means of lantern slides in the epidiascope. He said that these banners were formerly carried in processions in times of plague. He traced back the custom of carrying such pictures in public as far as the time of Gregory the Great at the end of the sixth century. He alluded to the many wonder-working Madonnas that abound in Italy, and assigned them a place in the lineage of plague banners. He showed a fifteenth-century fresco from the church of S. Pietro in Vincoli at Rome, which depicted the carriage of a plague banner of the Madonna sheltering her suppliants beneath the folds of her robe. Passing to the gonfaloni of Perugia, he showed that such banners were not an exclusive product of the Umbrian school. They fall into three groups, according as the central figure of the banner is the Madonna, Christ, or a plague saint, usually St. Sebastian, on account of his local veneration. Examples of each type were exhibited and the salient features explained. Dr. SAMBON took part in the discussion.

Some Oddities in Nomenclature.

Mr. B. GLANVILLE CORNEY, L.S.O., read a paper on this subject. He said that in Rio de Janeiro during the epidemics of influenza which occurred in 1777 and 1802–3 the disease was called "zamporinion" and "corcunda." He also cited an epidemic of dengue which ran through Brazil in 1847 and was called "polka" at Rio and "rabo aberto" at Bahia. The term "zamporinion" was adopted from the name of a Venetian singer who was popular at Rio at the time, and has nothing to do with the Portuguese name for measles, "sarampao"—in Spanish, "sarampion"—which is directly derived from the Greek, the bright colour of the rash resembling that of a faded

vine leaf. "Corcunda" means hunchbacked, and came into popular use because of the bent condition in which patients were left at the end of each paroxysm of cough, which was said to be of a very spasmodic character and closely to resemble whooping-cough. Dengue was called "polka" because of a distinguished court beauty at Rio who was a native of Poland and was in great vogue at Bahia at the time of the epidemic. The same epidemic received the name "rabo aherto" because there chanced to be coincidently an unusual glut of the fish of that name. Mr. Glanville Corney advanced the theory that an epidemic of cerebro-spinal meningitis was coincident with the Bahia epidemic and that whooping-cough played a part in the "corcunda" attack. He also alluded to the older folk names for influenza—namely, "le tac," "the new delight," and the "jolly rant," which have in turn displaced each other and have themselves been replaced by "the flue."

Eighteenth Century Obstetric Forceps.

Mr. ALBAN DORAN demonstrated by means of the epidiascope some eighteenth century obstetric forceps. He showed *Grégoire's forceps.* This is a heavy instrument weighing 1 lb. 9 oz., measuring 17 in. in length, with no pelvic curve, but with fenestrated blades. It differs from Grégoire *fils* original type in its simpler lock, and in a mechanism to allow of one handle being used as a sharp crotchet, as in Freke's instrument. It is uncertain if Grégoire devised this modification since he never wrote on his own forceps, and Boehmer is the original literary authority. *Orme-Lowder forceps*: Very short, blades straight, broad, narrower at the free ends, which are 1⅛ in. apart when the handles are closed; the fenestrae are wide. The evidence, again, is that of contemporaries, because Orme left no writings; Lowder admitted Orme's priority in some manuscript lectures. Kühn wrote the first published description of Orme's forceps in 1783. Mulder, a pupil of Orme and Lowder, published important evidence, and sketched their forceps himself. The inventors considered that the wide fenestrae and narrowing of the broad blades near the tips adapted their instrument to the fetal head. Lowder rejected Orme's leather covering for the handles. Mulder and Kilian differ as to the extent of the leather covering in Orme's forceps. The instrument exhibited seemed intermediate, being longer than Orme's and shorter than Lowder's, whilst the handles were lined with leather. Haighton's forceps were an exaggeration of the main features in the Orme-Lowder type, but there was no description of his forceps in his manuscript lectures. Blundell, Haighton's nephew, noticed Orme's and his uncle's forceps in his textbook, ignoring Lowder's. There is some uncertainty about the precise nature of variation in Haighton's instrument. David Davis designed forceps with even wider fenestrae. Conquest's widely fenestrated forceps had a screw-joint in one handle. *Osborn's Forceps:* The instrument exhibited corresponded exactly to a drawing in the inventor's *Essays* (1792). It was a miniature Levret, a light, short forceps, with relatively slender blades bearing a pelvic curve; it was also broadest at the tips, which were ¾ in. apart when closed. The whole instrument, including the fenestrae, was covered with leather. Mulder's contemporary evidence and Denman's own writings awarded the priority to Osborn. Denman's forceps were similar, but the blades had no pelvic curve. Thynne retained the pelvic curve and made the blades proportionately longer, according to Mulder; Thynne himself left no description of his modification in the abstract of his lectures.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

AT a meeting held on January 2nd, Dr. AMAND ROUTH, President, in the chair, Dr. CUTHBERT LOCKYER read a paper on *Adeno-myoma of the recto-uterine and recto-vaginal septa.* The author first remarked upon the rarity of new growth arising in the connective tissue of the recto-vaginal septum, and described a case which had come under his own observation. The patient was a sterile married woman, aged 35. There had been menorrhagia for twelve months and a good deal of pain in the rectum, and latterly defaecation became difficult. There had been no bleeding from the bowel. A hard mass was felt in the posterior fornix, which was attached to the supravaginal cervix and projected into the rectum, the rectal mucous membrane covering it being intact. The vaginal cervix was normal. Laparotomy showed that the body of the uterus and the appendages were normal; there was no cellular infiltration, and the growth, which was extraperitoneal, was firmly fixed to both rectum and uterus. The ureters were dissected out, the left being firmly incorporated with the growth; then the uterine arteries were tied and the parametric tissues divided as far out as possible. The bladder was then separated and the anterior vaginal wall divided. The rectum was divided between clamps above the growth, freed as low down as possible, and again divided, along with the posterior vaginal wall below the growth. The lower end of the rectum was closed and the upper end fixed in a separate opening in the left iliac region. Suprapubic and vaginal drainage was employed. The patient was making a good recovery. Microscopic examination showed that the growth resembled an adenomyoma of the uterus. Histologically it was comparatively benign, and might have originated in some vestigial remains of the Wolffian duct. An epidiascopic demonstration on the lighting of Continental operating theatres was given by Dr. MACNAUGHTON JONES, and short communications upon cases in which a foreign body was removed from the abdomen by laparotomy were read by Dr. RUSSELL ANDREWS and Dr. G. F. BLACKER.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF STATE MEDICINE.

Friday, January 17th, 1913.

Dr. T. P. C. KIRKPATRICK in the Chair.

Sanatorium Benefit in Ireland.

DR. R. J. ROWLETTE read a paper on this subject. He summarized the clauses of the National Insurance Act dealing with the sanatorium benefit, and sketched the machinery by which it is administered. He then defined the relations of the Insurance Committees and the county councils, and described the various agencies to be employed in a tuberculosis campaign. He concluded with an appeal to the profession to assist cordially in the working of the benefit. Dr. T. J. CROWE pointed out the disadvantages of the arrangement by which the dispensary was to be only a place for consultation. In Dublin most of the cases had just been sent up by the practitioners with letters asking them to be dealt with, and the rules laid down forbade the tuberculosis officer doing so. Dr. PATRICK HEFFERNAN said that there seemed to be great uncertainty as to the definition of domiciliary treatment. Sir JOHN MOORE agreed with Dr. Crowe that the Insurance Act had raised great difficulties in respect to tuberculosis. Provision was made, it had been pointed out, in the Act for extension to other diseases; although pneumonia killed between 40,000 and 50,000 people in England and Wales every year, there was no notification or sanatorium treatment provided in this country for patients recovering from it. With regard to the advanced cases the conditions were deplorable, and the Act had made no provision for them. If the Insurance Act provided for the remuneration of medical officers in connexion with the tuberculosis section of the Act, he thought the honorary staffs of hospitals should not consent to work those sections of the Act without fair remuneration. Dr. CROFTON considered that much advance would not be made in the treatment of the disease until institutions were provided completely equipped and having whole-time directors and assistants as in Germany. Dr. MCDONALD, referring to his own experience, objected to examine patients apart from the practitioner in attendance, but the Commissioners insisted on his doing so. Dr. LAW said that the paper had shown how unsatisfactory was the Act. It was of the greatest importance that every case should be notified. How the expense of treatment was going to be met out of the money available was not clear. Advanced cases among the poor were an imminent danger to the whole community, which demanded compulsory segregation. The CHAIRMAN dwelt on the difficulties in working the Act and the way in which it was proposed to work it, but he thought that if the medical profession joined whole-heartedly it would

greatly aid in stamping out the disease. In the past, when a patient, a bread-winner, was met with in which there was hope for improvement, he perhaps could not afford to undergo the treatment, but under the present Act this difficulty would in part at least be removed. Dr. ROWLETTE, in replying, said that every effort would have to be made to confine dispensary officers to consultation work, but he saw no reason why one of the dispensary staff should not go in consultation to the home of the patients to examine contacts. Domiciliary treatment meant whatever treatment could be carried out in the home of the patient. The necessity for provision for advanced cases seemed most important, yet county councils were rushing into provision of sanatoriums and taking no care whatever of such cases. As to treatment, he pointed out that no general practitioner could be employed to attend his own patient without the manner of treatment being approved by the Local Government Board. Referring to the question of finance, the amount available for sanatorium benefit for the city of Dublin would be about £3,000. The corporation would have power to levy a 1d. rate, which would bring about £4,000, and if this were done the Treasury would add a further £4,000, making the total for providing treatment £11,000. He agreed with Sir John Moore about the honorary staffs of general hospitals. As to what constituted treatment under the Act, there was great difficulty in ascertaining the point. Food supplied on a doctor's order was at first held not to be treatment, but it had since been held to be treatment.

The Mental Deficiency Bill and its proposed Extension to Ireland.

Dr. W. R. DAWSON referred to Standing Committee B, by which up to the end of the year seven clauses had been considered and amended, providing for the constitution of the central authority (for England), the constitution and duties of the local authority, and defining the persons subject to be dealt with under the bill. After referring to certain amendments, Dr. Dawson remarked that on the whole the bill had gained greatly in Committee. The class of persons who had become mentally infirm from age or decay of their faculties had wisely been withdrawn. The local authorities were to be the county and borough councils respectively, but they were not to be obliged to provide accommodation unless one-half the net cost of maintenance was contributed by Parliament. The numbers to be provided for might be roughly estimated at 10,000, not including persons in asylums, but many of these were already provided for at public expense, so that their present cost would have to be deducted from the amount required to work the bill. As matters stood at present the bill was to apply to England and Scotland, but not to Ireland, which required such a measure far more than either of the former. It would not offer a complete provision, but would make a much-needed beginning, and if the present opportunity was lost, there seemed little chance of any legislation on this pressing matter for years to come. The CHAIRMAN said the matter had occupied the attention of the Medico-Psychological Society (Irish Branch) for a long time, and they had done a great deal to urge the extension of the bill to Ireland. Dr. LEEPER added that no one, unless he had worked amongst the insane of Ireland, would realize the importance of this measure to the country, where the insane population was yearly becoming greater, and he felt that that increase would go on until such a measure as the one referred to was introduced. He proposed the following resolution:

> That the Section of State Medicine of the Royal Academy of Medicine in Ireland strongly approves of the extension of the Mental Deficiency Bill to Ireland, and recommends the Council of the Academy to adopt this resolution and forward copies to the Chief Secretary for Ireland, the Lord Chancellor, and to the Irish members of Parliament.

He considered that if the Section gave its support they would be doing much good to the country. Sir JOHN MOORE seconded Dr. Leeper's resolution, which the CHAIRMAN put to the meeting. It was declared carried unanimously. Dr. DAWSON referred to the method of treatment which children had to undergo in asylums, and said that he did not like to see children in asylums at all. Of course, in the Stewart Institution they could only be detained if they were certified as lunatics. He saw no difficulty about the application of the Act to Ireland.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

A MEETING of this society was held in the Glasgow Royal Asylum, Gartnavel, on December 20th, 1912, the PRESIDENT (Dr. Freeland Fergus) being in the chair. A clinical and pathological demonstration was given by the staff of the asylum, in the course of which the SUPERINTENDENT (Dr. L. R. Oswald) read a paper on, and demonstrated several cases of, *Dementia praecox*. Dr. R. M. MARSHALL discussed the differential diagnosis of dementia praecox from manic depressive insanity. Dr. F. MURCHIE made a short communication on *The eyes in dementia praecox;* and Dr. IVY MCKENZIE read note on *Dementia praecox and general paralysis: a comparison and contrast.*

At a meeting held on January 17th, Dr. J. CRAWFORD RENTON being in the chair, Dr. IVY MCKENZIE showed and described pathological preparations from the following cases: (1) A woman, aged 40, an inmate of the Glasgow Royal Asylum, Gartnavel, suffering from *Recurrent insanity with exophthalmic goitre, leucoderma, and bronzing of the skin*, also auriculo-ventricular tachycardia (230 per minute) and auricular fibrillation. *Post-mortem* examination showed disease of the thyroid gland and of the upper cervical sympathetic ganglion, and hypertrophy of the medulla of the suprarenals. (2) A man, aged 40, a dement, who died suddenly in Gartnavel Asylum with symptoms simulating intestinal obstruction, tympanites, faecal vomiting, etc. *Post-mortem* examination showed *Necrosis of the pancreas and necrosis of the mucous membrane of the small intestine*, involving the whole length of the bowel. Dr. DAVID NEWMAN read a short paper on *Certain urinary conditions in women, associated with frequent or painful micturition*, and demonstrated with the projectoscope the cystoscopic appearances presented in the early stages of tuberculosis of the bladder, and in the various stages of colon-bacillus infection of the bladder. He pointed out that one of the slightest forms of colon infection of the bladder was seen frequently in infants and young children as the result of want of cleanliness in changing the child's napkins. The frequency of micturition might not be noticed in infancy, and for years afterwards the child suffered from nocturnal incontinence, which might persist until puberty or even later. Dr. J. A. WILSON read a paper on *Myopia: a review of 500 cases, with special reference to their etiology*. From an analysis of his cases he found: (1) Keratitis as the cause of myopia in 16 per cent.; (2) evidence of heredity in 54.8 per cent.; (3) cases without opacities and without evidence of heredity in 29.2 per cent. In the hereditary group were 17 cases with opacities; 65 cases showed monocular myopia, largely accounted for by keratitis and by heredity. Lenticular changes were found in quite young people. The evidence regarding near work as a cause was reviewed, and it was pointed out that for evident reasons German school hygiene had not lessened the amount of myopia.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

A MEETING of this society was held on January 31st, the PRESIDENT, Dr. Dobson, being in the chair. Dr. G. W. WATSON opened a discussion on *Tuberculin*, its place in modern medicine. Remarks were made on the varieties of tuberculin in common use, and the various methods of administration were outlined, with descriptions of the types of case suitable for each method. Dr. Watson was of opinion that the efficacy of tuberculin was so far proved that its use was essential in the proper treatment of most cases of tuberculosis of the lungs. He deplored the tendency under recent legislation to make the treatment of phthisis a speciality and to give it into the hands of the few rather than to obtain the skilled and enthusiastic co-operation of the whole of the profession. Dr. CHRISTY WILSON spoke of his experience of Béraneck's tuberculin, and instanced cases in which it had proved of great value. Dr. BARRS spoke of the treatment as being still on its trial, and confessed that no convincing example of its usefulness had yet come within his experience. Mr. J. F.

DOBSON spoke of the value of tuberculin in the treatment of cases of surgical tuberculosis. He was in favour of the method of administration recommended by Wright. Dr. COPLANS contributed some interesting information about tuberculosis in animals. Cases were shown by Dr. HELLIER, Mr. A. L. WHITEHEAD, Mr. CONSTABLE HAYES, Mr. J. F. DOBSON, Dr. C. OLDFIELD, Mr. COUPLAND, Mr. MICHAEL TEALE, and Dr. WATSON.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on January 22nd, the President, Mr. W. G. LAWS, in the chair, Dr. L. W. MARSHALL opened the discussion on the *Medical aspect of education*. The first aim of teachers should be to produce physical fitness and then mental culture in their scholars. The attention of teachers should be drawn to the various parts of the body developed at different periods. Private tuition was bad. It was most important that the preparatory schools should be good, and such as gave great attention to the early development of the body. "Only" children were greatly to be pitied. From 4 to 7 years the Kindergarten system was the best. From the 7th to the 9th years neuroses developed and should be carefully watched. At this period, also, the teeth were changing, and sleep was apt to be affected. The cardio-vascular system developed about the 9th year. Discipline should be enforced from the 7th to the 9th years; more mental pressure might be applied from the 9th to the 13th years. The "will power" was now developing, and became confirmed after the sexual development at the age of 13 years. Miss SARAH GRAY laid great stress on eliminating all physical defects. The "nervous child"—that is, one of exalted sensibility in particular—should be carefully watched. The aim of teachers should be to (1) make the child a healthy animal, (2) avoid stimulation in every way, (3) provide for ample sleep, (4) allow the child a definite amount of daily leisure when it should amuse itself; and, lastly, not to overwork the child, especially between the ages of 9 and 13 years. Drs. S. E. GILL, J. S. BOLTON, and W. HUNTER continued the discussion.

HARVEIAN SOCIETY.

A CLINICAL meeting of the Harveian Society of London, held at St. Mary's Hospital on Thursday, January 30th. The following cases were shown:—(1) Dr. SIDNEY PHILLIPS: An abdominal case, probably tuberculous. (2) Dr. WILLCOX: Two anomalous cases of *Exophthalmic goitre*, a case of *Chronic enlargement of joints resembling Charcot's joints*, and a case of *Perforating ulcer of the foot*. (3) Dr. REGINALD MILLER: *Post-pneumonic fibrosis of the lung*, and a case of *Endemic cretinism* fifteen years old. (4) Dr. GRAHAM LITTLE: A man with *Psoriasis* covering his whole body, and a woman with *Lichen planus hypertrophicus verrucosa*. (5) Mr. COPE: A case of *Syringomyelia*, and a case of recovery after *Rupture of the jejunum*. (6) Dr. WILLIAM HILL: A case of *Epithelioma of the Larynx*, and a case of *Stricture of the pharynx* after swallowing glacial acetic acid with suicidal intent. (7) Mr. BRYAN: A girl with a *Sarcoma of the lower jaw*, and a man with a large tumour just above the ankle of doubtful nature. (8) Mr. DUNCAN FITZWILLIAMS: A *Fibrolipoma* in a child, and a man with a large *Epithelioma*, growing rapidly from an old urinary fistula.

LONDON DERMATOLOGICAL SOCIETY.

AT a meeting held on Tuesday, January 21st, Dr. MORGAN DOCKRELL in the chair, Dr. W. GRIFFITH showed a case of *Ichthyosis* in a boy aged 13, displaying the typical "crocodile hide" marked over the chest and back, where the thickened skin lay in large folds. He proposed treating him with thyroid extract. Dr. Griffith also showed another but milder case of ichthyosis. Dr. BUNCH considered 3 grains of thyroid extract three times a day to be a fair dose. The PRESIDENT, who had recently prescribed it freely, thought that a patient should take at least 9 grains a day, though he had himself often taken as much as 15. Dr. KNOWSLEY SIBLEY considered that recently too large doses of thyroid were administered. A grain and a half once daily, only very gradually increased, seemed sufficient. Doses of $\frac{1}{4}$ and even $\frac{1}{10}$ grain were now often given. Dr. J. M. BUNCH showed a case of *Mycosis in the fungoid stage* in a woman aged 26. For about nine months she had been subject to a pinkish, yellowish, and slightly scaly eruption over her body. Dr. GRIFFITH showed a case of *Angioma serpiginosum* which had been completely cured in the electrical department. Dr. HAMPSON explained that it had been treated with solid carbon dioxide and *x* rays. Dr. SIBLEY showed several cases: (1) Of a man aged 28 with a considerable amount of keloid scar formation over his face and the back of the neck, the result of acne, which he was treating with benefit by hyperaemia. (2) A man aged 50 with an extensive eruption of lichen planus. (3) A man 28 years of age with some remarkable old standing lesions on his hard palate, and some few brownish, scaly, ringed-like patches on his skin, probably old syphilis. (4) A man aged 30 with a marked tertiary patch on his right cheek. (5) A woman aged 23 with condylomatous patches on her lips, chin, thighs, and genitalia. Dr. J. M. BUNCH opened a discussion on *Bullous eruptions*, in which he described in detail the various skin lesions which were the result of or accompanied by bullae. The PRESIDENT, Dr. GRIFFITH, and Dr. SAMUEL joined in the discussion.

Reviews.

GIBSON'S LIFE OF GAIRDNER.

THERE must be many not only of his old pupils and personal friends, but amongst the medical profession in all parts of the world, who will be glad to possess this *Life of Sir William Tennant Gairdner*,[1] and to find included in it a selection of his general and medical papers. But the work possesses an additional value to not a few as being the last production of the pen of the greatly beloved GEORGE ALEXANDER GIBSON, who, as the intimate friend and latterly the medical adviser of Sir William, was selected by the family for the honourable duty of preparing this memorial to one who was undoubtedly the most notable figure in Scottish medicine during the last half-century.

Gairdner came of a family which has many distinguished connecting links with the medical profession; the late Professor Sir Douglas Maclagan was a cousin in some degree, as was also the distinguished naval surgeon Sir Gilbert Blane, while William Gairdner, the author of the well-known work on *Gout*, was his uncle. John Gairdner, the father of Sir William, was President of the Edinburgh College of Surgeons in 1830–31, and wrote many papers on the history of the profession, while his mother, Susanna Tennant, was a sister of Sir James Tennant, K.C.B., who commanded the artillery at Chillianwalla and Gujerat.

William Tennant Gairdner was born on November 8th, 1824; he was his father's second son, and in connexion with his family it is only necessary to add that a younger brother was the distinguished historian, James Gairdner, C.B., LL.D., D.Litt. Gairdner's education was received at the Edinburgh Institution and the university of his native city, which last he entered in 1840, taking his M.D. degree in 1845, evidently at the earliest possible age of 21. Among his contemporaries were many who became distinguished men, but the writer of this notice has heard some of them say that they looked up to Gairdner as their leader. After graduation he had the advantage for so young a man of accompanying Lord and Lady Beverley (afterwards Duke and Duchess of Northumberland) to Rome, where he remained a year; the mental impression then received was never effaced. On his return to Edinburgh he entered the Royal Infirmary as a resident, serving both as house-physician and house-surgeon during a period extending over two years, and the maturity of his mind is shown by the fact that he then prepared his papers on the pathology of the kidney. In 1848 he was appointed pathologist to the infirmary, and began to lecture on pathology with such success that the

[1] *Life of Sir William Tennant Gairdner*, K.C.B., M.D., LL.D., F.R.S., Regius Professor of Practice of Medicine in the University of Glasgow. By George Alexander Gibson, M.D., Sc.D., LL.D. Glasgow: James Maclehose and Sons. 1912. (817 pp. 12s. 6d.)

members of his first class gave him a copy of Bright's *Hospital Reports*, with a letter expressing their sense of the high value of his teaching; among the signatures appended to that letter are to be found the well-known names of James Warburton Begbie, Henry Duncan Littlejohn, Thomas Keith, Arthur Scott Donkin, and Alexander Fleming. In 1853 he became physician to the Infirmary; meanwhile he had published many of those papers which founded his reputation as a scientific physician; in the same year he commenced lecturing on the practice of medicine. In 1855 he was a candidate for the Chair of Medicine in Edinburgh, vacant by the death of Alison; but the choice of the curators, guided, it is said, by Sir James Simpson, fell upon Thomas Laycock, a physician of York. In 1862 he published his *Clinical Medicine*, and in the same year was appointed Regius Professor of the Practice of Medicine in Glasgow, henceforth to be his home and the centre of his educational and professional life until his retirement in 1900. Gairdner's interests were by no means limited to his profession, for he was keenly alive to questions of theology or philosophy, politics or literature, as his letters published in this volume bear witness; but into these channels his mind overflowed without prejudice to the main stream of his thoughts, which was always, even to the end of his life, directed to the advancement of the science of medicine.

Gairdner did not marry until he had reached the mature age of 46; he has left a family of four sons and three daughters to be a solace and support to Lady Gairdner in her widowhood.

He died at the age of 83, on June 28th, 1907, at his house at Colinton, near Edinburgh. For the last five years of his life he had suffered from the condition known as "heart-block," and the study of his own case in the light of new methods of research which Dr. Gibson was so well qualified to employ, gave him much food for thought. He ultimately passed away quite quietly in one of his fits of unconsciousness.

His many-sided mind is vividly illustrated by the papers reprinted in this volume. Among British physicians of his day Gairdner was indisputably the foremost academical figure; there was no teacher like him; he lived for his chair and his students, but his words reached a wider audience and his spirit inspired many who had never seen him or heard his voice.

All those who read Dr. Gibson's book will feel that they owe a debt of gratitude to the author for the admirable manner in which he fulfilled his task, and will join in regretting that it is now too late to offer him even a few poor words of thanks for this memorial to which he devoted so much care and labour.

THE CARRIER PROBLEM IN INFECTIOUS DISEASES.

UNDER the title of *The Carrier Problem in Infectious Diseases*,[2] Drs. LEDINGHAM and ARKWRIGHT have prepared a useful historical summary of the main facts about infection by "carriers" in six important diseases. Nearly half the book, and distinctly the best part, is occupied by typhoid fever, the transmission of which by carriers is a subject of universally recognized importance, thanks largely to the investigations initiated by the late Professor Koch in 1902. The present survey of this problem is to a large extent a reproduction of Dr. Ledingham's excellent report to the Local Government Board, issued in 1910 (New Series, No. 43), and we are glad to see that his work is now given the opportunity of a wider publicity. Unfortunately little or no success has been attained in many of the attempts hitherto made to cure the chronic carrier of typhoid bacilli. The administration of drugs seems useless, or at least to have no more than a temporary effect. Sour milk treatment has been equally disappointing in the hands of Dr. Ledingham and some other observers, and cases of alleged cure by this method are, in Dr. Ledingham's opinion, open to the criticism that the permanency of the cure has not yet been fully established. The author gives us an interesting account of attempted cures by surgical operation on the gall bladder, but here again he thinks the prospects of success are small in long standing cases, though a definite pronouncement must be postponed until the cases have been under bacteriological supervision for at least one or two years after operation.

Next in order of interest is the chapter on the cholera carrier. From a review of the data available, Dr. Arkwright concludes that about half the persons who recover from an attack of true cholera retain the vibrios for from ten days to a fortnight. Only 5 or 6 per cent. remain infective for over twenty-five days, but of these latter 1 or 2 per cent. continue to excrete the vibrio intermittently for two or three months. This raises the important question whether the danger of the cholera carrier is sufficiently great to justify a bacteriological examination of all passengers on ships arriving from cholera-infected ports. Dr. Arkwright tells us that at New York, between July and November, 1911, 26,455 passengers were examined bacteriologically for cholera vibrios; "150 were detained for further examination, and 26 (1 per cent.) were eventually proved to be carriers." In the last sentence the printer has apparently omitted a decimal point, as the above figures give an average of only 1 carrier per 1,000, a difference which is of very considerable importance in estimating the value of this irksome interference with the convenience of passengers and the interests of trade.

The lengthy chapter on diphtheria carriers covers well-trodden ground and calls for no special comment. The three other diseases which are dealt with are paratyphoid fever, epidemic cerebro-spinal meningitis, and dysentery. The collection, from various sources, of statistics as to carriers of the meningococcus has been made with great care, and will be much appreciated by epidemiologists.

ASTHMA.

DR. SIEGEL'S treatise[3] contains the orthodox view on the nature of asthma. After surveying the experimental enquiries into the function of the bronchial muscles Dr. Siegel defines asthma to be "a reflex neurosis characterized by asthmatic attacks" (*sic*), and concludes that these are due to a combination of a bronchial spasm with an abnormal bronchial secretion, of which the former is the predominant factor and that organic lesions which may be discerned during life or which have been found at the *post-mortem* examinations hitherto recorded have no bearing whatever on the mechanism of the dyspnoea, this being a purely functional derangement.

Dr. Siegel's pathology, however, is not consistent with facts, and appears to have been constructed, as too commonly happens, not merely with preconceived notions but also on the basis of cases which he had seen in the intervals between, rather than during, the attacks. Had he actually observed a large number of the latter he could hardly have failed to notice, that just amongst the neurasthenic and the hysterical, whom he had in his mind, it occurs not infrequently that even at the height of the dyspnoea the air passages are perfectly pervious and that there is at the time not the slightest sign of any impediment to the ingress and egress of air. In these circumstances, whatever the immediate cause of the seizure may be, it is clearly not a bronchial spasm. True, in the majority of instances there is obviously an obstacle in the bronchial tree; but the nature of this obstacle can only be rightly inferred from the just appreciation of the clinical data. In that respect Dr. Siegel has completely failed. His notion, for instance, that the deformities of the chests of asthmatics are the consequence of their faulty attitudes during the paroxysms is amply disposed of by the facts, as Berkart has pointed out, that these deformities exist long before the onset of the first dyspnoeal paroxysm and that, if opportunities are given of examining the parents, or members of the same family who are not asthmatic, they also present deformities of the osseous system. A little reflection, moreover, would have convinced him that there are certain data which militate against his conclusion. He himself has observed that occasionally the obstruction is entirely limited to one lung—an observation which he

[2] *The Carrier Problem in Infectious Diseases.* By J. C. B. Ledingham, M.B., D.Sc., and J. A. Arkwright, M.D. International Medical Monographs. London: Edward Arnold. 1912. (Demy 8vo, pp. 326. 12s. 6d. net.)

[3] *Das Asthma.* Von Dr. Wolfgang Siegel. Jena: Gustav Fischer. 1912. (Roy. 8vo, pp. 170. Mk. 4.)

claims to be original, but to which Berkart has called attention more than twenty years ago. Does the spasm affect, then, only one lung? And what about the results of the *post-mortem* examinations of the cases which have succumbed during the attacks? There were found dilated bronchioles filled with morbid exudation and with walls either atrophic or degenerated by interstitial connective tissue proliferation; yet, in spite of the progress of these lesions, which clearly preclude any active contractions of the bronchioles, the dyspnoeal seizures have maintained their types, and have increased in frequency and severity.

Equally unsatisfactory is the method of treatment which Dr. Siegel advocates. His book is avowedly intended for the use of practitioners who have had no special experience in dealing with asthmatics. In order to supply this deficiency he gives them exhaustive lists not only of the remedies and remedial measures commonly in use, but also of the numerous nostrums which industrial enterprise has placed on the market. Definite indications he can give only for a few of them; instead of them he over and over again advises the inexperienced practitioner to try them all—*ausprobiren*, as he calls it—on the chance that the one or the other may produce the desired results. It is difficult to conceive of anything more painful to read than such recommendation. To his credit, however, it must be said that he is averse from the haphazard operations on the nose. The proud edifice, he states, which has been built on their first introduction has entirely collapsed, as experience has shown that the successes have been few and the failures many. Dr. Siegel does not rely entirely on medicinal or other method of treatment. An indispensable element in the management of asthmatics is, he holds, the individuality of the practitioner—that particular tact which cannot be acquired but must be innate in the successful asthma specialist. Without this quality all efforts to combat the disease must, he maintains, remain vain. We are led to suppose that with this endowment and with the advantages of a salubrious climate such as that of Reichenhall where, moreover, there are cabinets for inhaling compressed air, the prospect of obtaining full mastery over what is otherwise one of the most intractable of complaints is very promising

SHORT TEXTBOOKS OF MEDICINE.

THERE are few works on the science and practice of medicine which can claim to have retained the favour of professional appreciation for such a long and uninterrupted period as thirty-two years. This highly satisfactory record has been achieved by Professor CARTER'S treatise on the *Elements of Practical Medicine*,[4] and we congratulate the distinguished author on the appearance of the tenth edition of a work which has been so successful as to prove acceptable for nearly one-third of a century. Practical medicine has become so extensive as to make it a matter of much difficulty for any author to compress into one volume the main outlines of a subject to which enormous treatises have been devoted. Dr. Carter modestly declares that his book attempts to deal only with the elements, but he has succeeded in producing a trustworthy synopsis of the essential facts belonging to clinical medicine, and has marshalled his material in such a masterly way as to provide his reader with a bird's-eye view of the present position of knowledge in its relationship to the broad outlines of etiology, pathology, symptomatology, and treatment in their bearings upon the recognition and management of medical disorders. In common with all books that attempt the delineation of such an extensive subject as general medicine, Dr. Carter's volume suffers from the compression which is essential to the fulfilment of the plan of production. Much important detail is of necessity omitted, and, especially on the question of treatment—which is, after all, the practical application of research and knowledge to the requirements of the sick—the information afforded is too generalized to be of great value to the busy practitioner. Still, in regard to treatment, as to all the other factors that go to make up a complete picture of disease, the author succeeds in giving the outlines of his story in terms of sufficient comprehensiveness to guide his readers along the true pathway of clinical investigation, and to direct them to an accurate appreciation of the methods of prevention and cure which, in the light of present knowledge, are most generally acceptable. For more detailed information recourse must be had to larger textbooks and to works more extensively devoted to the consideration of special subjects. The favourable criticisms that have been expressed concerning previous editions may be confidently reiterated concerning this tenth issue. The book has been carefully revised and many chapters rewritten, new information in connexion with the more recent advances in medical science and practice has been added, and the application of general principles to the recognition and treatment of disease has been elaborated at the sacrifice of details. This has been done with a view to keeping the volume within moderate compass and to fulfilling its purpose of being useful to students and junior practitioners as a guide and remembrancer rather than a textbook. Practically the whole of the re-editing has been undertaken by the author personally. This gives to the various sections of his work a level merit and plan of execution which is sadly wanting in many of the treatises produced after the present day fashion of multiplicity in authorship. We are able to recommend Dr. Carter's new edition as cordially as we have recommended its predecessors to the perusal of students and practitioners alike. They will find it a concise and reliable guide to practice, unencumbered by theoretical disquisition, but bristling with ascertained facts—in short, a *multum in parvo*, which records the outcome of the author's extended personal experience, and may be relied upon for accuracy and wise guidance. The book is pleasantly written, has the advantage of a copious index, and comprises a therapeutic guide illustrative of the author's experience in drug combinations.

Dr. FLEMING must be congratulated upon his success in preparing the second edition of his *Short Practice of Medicine*.[5] The medical student preparing for his final examinations in medicine and the practitioner anxious to get at the centre of the many problems connected with medical diseases will be grateful to an author who, whilst giving the essentials, has skilfully avoided entering into vexed controversies. If Dr. Fleming has been ruthless in this direction and has not given as much attention to some of the more modern points of view, such for example as the unity of so-called rheumatic fever, the alleged benefit to be derived from the use of tuberculin in the treatment of pulmonary tuberculosis, and the toxic origin of cardiac hypertrophy, the reader must feel that although the author has set out to write an account in short compass of the practice of medicine, he is inclined to be critical and rightly so, for the readers of this volume will mostly want facts and not theories. On page 599, it is evident that the two sentences beginning "Schlösser" have got out of their place. We may call the attention of teachers of medicine to some of the very cogent remarks in Dr. Fleming's preface to the original edition. He has evidently formed a true estimate of the duties of a lecturer in medicine. He leaves to the student the duty of learning for himself from a textbook the general outline of each individual disease and provides in lecture form special points, clinical illustrations, and hints on treatment. This volume is admirably designed for such a scheme.

A LIBRARY OF THERAPEUTICS.

THE large *Bibliothèque de thérapeutique*, projected and edited by Professors A. GILBERT and P. CARNOT, of the Faculty of Medicine at Paris, is divided into three series and twenty-eight volumes. The first series, comprising fourteen volumes, deals at full length with the various therapeutic agents at our command; eight of these volumes have now come out. The third series, to be completed in eleven volumes, will describe the treatments applicable to the various diseases of the different

[4] *Elements of Practical Medicine.* By Alfred H. Carter, M.D., M.Sc., Professor of Medicine, University of Birmingham: Emeritus Professor of Physiology, Queen's College, Birmingham, etc. Tenth edition. London: H. K. Lewis. 1912. (Crown 8vo, pp. 700. 9s. net.)

[5] *A Short Practice of Medicine.* By Robert Fleming, M.A., M.D., F.R.C.P.E., F.R.S.E., Lecturer in Practice of Medicine, School of the Royal Colleges, Edinburgh; Assistant Physician, Royal Infirmary, Edinburgh. Second edition. London: J. and A. Churchill. 1912. (Med. 8vo, pp. 849; 55 illustrations. 12s. 6d. net.)

systems of the body. The second series, with which we are now concerned, is divided into three volumes, and discusses the treatment of symptoms and signs. It is often difficult to decide whether a given symptom demands treatment or not, whether it should be encouraged or combated; what means (if any) should be applied to the end desired; the phenomena of inflammation may be quoted as an instance of this difficulty, or the occurrence of epistaxis in a patient with abnormally high blood pressure. The object of the second series is to throw light on these often difficult, or even insoluble, problems; and its first volume,[6] on general symptomatic treatment, is written by a number of the most distinguished clinicians in France. To mention the separate chapters written by each of them is impossible; it is sufficient to say that the book contains a series of fairly detailed sketches setting out the general lines of treatment in such general conditions as fever, the infections and intoxications, developmental defects, senile involution, oedema, and the like. These sketches are well written, give much general advice, together with a few detailed prescriptions, and are thoroughly up to date. In addition, they contain very useful descriptions of the physiology and pathology of the various diseased conditions they describe. The volume may be warmly commended to the philosophical practitioner.

ELEMENTARY ZOOLOGY.

AMONG the many excellent scientific works that have emanated from the Oxford University Press during recent years, the *Manual of Elementary Zoology*,[7] by Mr. L. A. BORRADAILE, can by no means be reckoned the least important. As the author says in his preface, he has "endeavoured so to treat of the animals which are most often studied in courses of elementary zoology as to introduce the student by their means to the principal problems of the science." He has kept this object in view throughout, and the manual is one we can thoroughly recommend to those students, medical or other, who are commencing the study of zoology. After a clear but concise introductory chapter on the animal organism, the author departs from the usually accepted order of considering the animal kingdom and starts with the frog. By so doing he is enabled to describe in detail much of the minute anatomy of this animal, and so to demonstrate, as he goes along, the provisions that exist for carrying out the various physiological functions that he has previously referred to in his introduction. He then turns to the monocellular amoeba and goes forward in an ascending scale through the polyps and medusae to the flat and round worms, on to the crayfish, mussel, lancelet, and dogfish, and so reaches finally the mammal, as exemplified by the rabbit. There are, in addition, chapters on reproduction and sex and on embryology, and an appendix of instructions for practical work. The book is of handy size, well printed, and profusely illustrated. Many of the illustrations are from the pen of Dr. Edwin Wilson, whose name is a guarantee of their accuracy. We must take exception, however, to Fig. 216—the skeleton of a pigeon—and point out that the outermost toe of a bird has three interphalangeal joints and not two only, as in the drawing. The error, though apparently slight, is unfortunate, because the only way of discriminating between the right and left foot of a bird, when detached from the body, is by counting the number of (interphalangeal) joints in the three front toes.

To write an elementary scientific primer which shall be lucid, accurate, and up-to-date is indeed a difficult task. Such a difficulty has been successfully overcome by Professor GRAHAM KERR in his little work on *Zoology*,[8] one of Dent's series of scientific primers. The three animal types selected are the amoeba, hydra, and the earthworm, a chapter being devoted to each. The structure and physiology are described in simple and clear language. Then follows a short and succinct account of the natural groups of the animal kingdom which lie nearest to the main phylogenetic stem, such groups as the sponges and echinoderms being rightly neglected. The remaining three chapters are devoted to the fact and method of evolution and to the mechanism of heredity and variation. These difficult subjects are dealt with in a very elementary fashion, but are nevertheless admirable examples of lucidity. To the beginner, and to all those who may wish to acquire an elementary knowledge of biological facts, this book may be safely commended.

[6] *Médications générales.* By Twenty-one Authors. Paris: J. B. Baillière and Sons. 1911. (Post 8vo, pp. 712; 42 figs. Fr. 14.)

[7] *A Manual of Elementary Zoology.* By L. A. Borradaile, M.A. London: Henry Frowde, and Hodder and Stoughton (Oxford University Press). 1912. (Cr. 8vo, pp. 479; 301 illustrations. 10s. 6d. net.)

[8] *Zoology.* By J. Graham Kerr, F.R.S., F.L.S., F.Z.S., F.R.S.E., Regius Professor of Zoology in the University of Glasgow. London: J. M. Dent and Sons, Ltd. (Fcap. 8vo, pp. 100; figs. 13, 1s. net.)

NOTES ON BOOKS.

AN excellent book for mothers and nurses is Dr. BROCKBANK'S *Children: Their Care and Management*,[9] whilst doctors will pick up from it many practical suggestions not to be gained in hospital work or found in more pretentious books. From the chapter on the hygiene of the expectant mother to the last, on first aid in the nursery, the book is a storehouse of information on child management and care. On artificial feeding, weaning, the care of the infant, clothes, the nurseries, diet, digestion, and development, attention to the calls of nature, the teeth, bad habits, the special senses, schools and holidays, Dr. Brockbank has something useful to say. Whilst the hygiene of the older child is not omitted, the care and management of the infant get the fullest treatment; and, fortunately, Dr. Brockbank has not considered beneath his notice details, trivial in themselves, but of the greatest importance to the child and those who have charge of it. He lays stress upon the value of drinks of water to young babies, and refers to the need for using accurate measures in the preparation and administration of food. In the chapter on first aid there is no reference to that not uncommon nursery emergency, croup; and for cases of drowning Sylvester's plan of artificial respiration is given in preference to Schäfer's, which obviates the need for inversion of the body. The book is the work of one who has had much practical experience in the management of infants and children. Messrs. James Woolley, Sons, and Co., Limited, Manchester, supply a handy "First-aid Box for the Nursery," fitted up in accordance with Dr. Brockbank's suggestions.

[9] *Children: Their Care and Management.* By E. M. Brockbank, M.D., F.R.C.P., Honorary Physician, Royal Infirmary, Manchester. London: Henry Frowde and Hodder and Stoughton. 1912. (Cr. 8vo, pp. 272. 3s. 6d. net.)

MEDICAL AND SURGICAL APPLIANCES.

Non-Cutting Dissecting and Surgical Forceps.

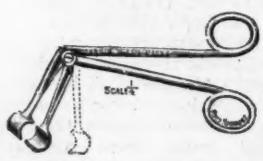
MR. GORDON G. COPELAND, B.A., M.B., (Toronto, Canada) writes: The forceps illustrated embodies two new principles—the special non-cutting tips and a grip-handle which does not tire the hand. The tip or end has been modelled after the human fingers. There are no sharp edges that can cut or damage a ligature held by them, or on which a knot is tied. It is designed to hold delicate structures such as vessels, nerves, tendons, and fine ligature material, and soft tissues generally. The length of the forceps is such that deep work, as in the pelvis can be done easily, whilst it is not so large as to be clumsy. Ligatures not infrequently cut through after they have been tied tightly down on a forceps with serrated edges. Either the ligature is allowed to slip, by the withdrawal of the forceps too soon to prevent the above accident occurring, or the operator takes the risk. I have tried a large number of knots that have been tied tightly down against an ordinary tissue forceps, and in each case the ligature has been damaged, most of all if it be soft catgut. The instrument is of special use in orthopaedic work, such as tendon transplantation, blunt dissection, keeping a running suture tight while the needle is taking a fresh stitch; and in operations on delicate and soft structures in general. The handle is a combination of the lateral corrugations and a longitudinal central groove. The curved depression allows the pulp of the fingers to fit in it and affords a broader bearing surface, which is much less fatiguing than any other type. This type of handle will no doubt be more generally applied to ordinary tissue forceps, and others. Messrs. Allen and Hanburys are the makers of this instrument.

An Anaesthetic Mask.

Mr. H. TORRANCE THOMSON, Anaesthetist to the Leith Hospital, writes: For several months I have used an anaesthetic mask which Messrs. Down Brothers made at my request. The mask proper is made after the pattern of one introduced by Kocher a few years ago. The feature of this is that the rim is notched to receive the bridge of the nose, so that accurate apposition of the mask to the face is possible. A perforated metal pipe arches over the vault of the mask internal to the gauze, with its inlet at the edge of the rim; through this a stream of oxygen, or of the vapour of chloroform from a Junker's inhaler, or of ethyl chloride, can be introduced. Superimposed on the mask is a second framework consisting of double parallel metal bars curved so as to arch antero-posteriorly and laterally to fixed points on the rim, and to intersect at the summit of the vault. These bars carry the ether chamber, which has a capacity of 2 oz., and a screw adjustment to regulate the size and rate of flow of the drop. The chamber is gripped by and can be moved in various directions between the parallel bars, so that the drop can be brought to bear upon the mask in whichever of the ordinary positions the head may be placed. A flange springing from the rim of the mask gives a fixed point for the left thumb to act upon, and the fingers of the left hand command the lower jaw. The right hand is available for such purposes as testing the depth of the anaesthesia, examining the pulse, adjusting and refilling the ether chamber. If it is desired to administer a more concentrated vapour a petticoat of Gamgee tissue may be applied over the upper framework of the mask. The advantages claimed for the apparatus are: (1) That a steady, continuous, and easily regulated quantity of ether can be administered; and (2) that the right hand, being freed from the task of holding the dropper, is more available for the performance of other necessary functions.

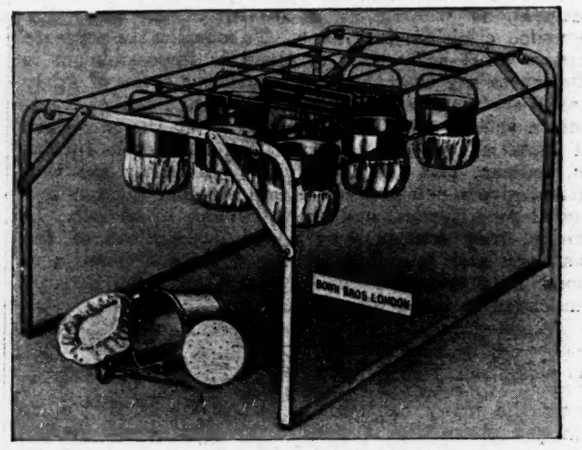
Sterilizer Forceps for Vaccine Syringes.

Dr. J. F. HALLS DALLY (London) writes: It is a matter of common experience that injection syringes are frequently dropped and broken, or the fingers are burned in the endeavour to keep hold of a syringe the temperature of which has been raised to about that of the boiling point of water or of oil. Equally futile is it in many cases to attempt to lift a syringe out of the boiling liquid in a sterilizer by means of ordinary dressing forceps, since these are apt to lose their grip on the circular and slippery surface of the syringe or neck of needle. Where time is valuable, as, for instance, in the administration of tuberculin to many out-patients in succession, where it is not desirable to wait until the syringe has cooled, the pair of forceps shown in the illustration will be found of practical utility in avoiding these inconveniences. The syringe with attached needle can be lifted out of the sterilizer without risk, drained of fluid, and then held securely whilst it is filled with the required dose. By this time the syringe is cool enough to be grasped by the fingers, and the injection may then be given, the piston being lifted out by its top in like manner. The forceps have been made to my design by Messrs. Allen and Hanburys, Limited, and are devised for use in departments for therapeutic inoculation. In addition to being serviceable for removing small vaccine syringes from the sterilizer, they can be employed also for use with hypodermic, serum, and exploring syringes of any capacity up to 25 c.cm., as well as more generally for operation instruments.



An Ice Cradle.

Miss K. C. BRAIDWOOD, Matron, Infectious Hospital, Mylands, Colchester, has designed the ice cradle illustrated in the accompanying drawing. The apparatus consists of a light folding body cradle, to the top frame of which are attached a thermometer and set of eight ice pails, the bases of which are enveloped in flannel caps, which, by absorbing the moisture due to condensation, effectually prevent dripping. The pails can be detached singly or otherwise, and the number in use at any time thus regulated to the requirements of the case. The advantages claimed for it are: (1) Convenience in carriage and storage; the cradle folds flat when not in use. (2) Avoidance of all discomfort to the patient, who also need not be moved. (3) Economy of time and labour, as compared with that of other methods, such as baths, packs, etc. (4) It can be easily managed by one nurse.



The method of use is as follows: The patient wears a long flannel gown and bed socks or is covered with a thin blanket, and has a water bottle at the feet, and the cradle is placed over the patient, well up over the trunk, and the pails and thermometer put in position. Two blankets are arranged over the cradle to open in the middle so that no inrush of air shall accompany inspection of the cradle thermometer. As the patient's temperature falls one or more pails are taken out. The nurse in charge of the apparatus notes the cradle temperature every time the patient's temperature is taken, and keeps the pails replenished. This is only the work of a moment if a bowl of chipped ice and an empty bowl into which to drain the pails are brought to the bedside. The makers of the apparatus are Messrs. Down Brothers, Ltd., St. Thomas's Street, London, S.E.

The Finger-Grips of Forceps.

Mr. N. BISHOP HARMAN (London, W.) writes: The finger-grips or plates of forceps have many varieties of markings thereon to ensure a proper hold of the instrument. The old file-markings that were in almost universal use are now considered obsolete in these days of "aseptic handles," although it is curious to note that similar serrations still are retained as indispensable at the business ends of the blades! File-markings have been succeeded by various breadths and depths of flutings, or by a broad, shallow groove extending the whole length of the finger-plate. Neither of these grips prove satisfactory; they are barely sufficient when the fingers are dry, they are inefficient when the fingers are wet, and a hold is impossible when the fingers are slippery. For the last two years I have been using sundry eye instruments and forceps in which

the finger-grips were secured by cutting holes in the flat plates. My experience of them has been most happy. They are superior in security to even the old file-markings. The figure shows a pair of iris forceps of the pattern used as conjunctival forceps in my new squint operation of sub-conjunctival reefing. The holes are cut square edged and give a most sensitive grip; in fact, "grip" is a poor word in its suggestion of strenuousness. Even when the fingers are wet or purposely slippery it is possible to hold these slender forceps accurately. The holes lighten the instrument (a matter of some consideration in eye work) and they are obviously clean. The size of the holes can be made large in proportion to the size of the forceps. The forceps illustrated were made by Messrs. John Weiss and Son, of Oxford Street, W.

Nova et Vetera.

PROVERBIAL MEDICINE.

PROVERBS OF DIET.

As might be expected, many proverbs reflect the very general and often well founded belief in the therapeutic value of diet, and reference has been made (JOURNAL, January 25th, p. 178) to such maxims as "Diet cures more than the lancet" and "Use first Dr. Quiet, then Dr. Merriman, and Dr. Diet"; but there are many other adages which illustrate and exemplify special aspects of this widespread and in many cases well founded belief, and to some of these proverbic expressions attention will now be directed.

To begin with Homer,[1] some have read into the phrase Δαὶς ἔϊση (an equal repast) an early Greek reference to care in dieting among the gods of Olympus, and the words have thus been used with something of proverbial force; but it has, on the other side, been maintained that the expression means no more than the "banquet equally shared." Even if this objection hold good, however, there is the maxim which has been ascribed to Theognis, according to which "Surfeit has killed many more men than famine" (*πολλῷ τοι πλέονας λιμοῦ κόρος ὤλεσεν ἄνδρας*); and Hippocrates[2] had an aphorism that "Everything in excess is inimical to Nature" (*πᾶν γὰρ τὸ πολὺ πολέμιον τῇ φυσει*).

The direction thus given to proverbial wisdom about food by the Greek writers was maintained by those who came after them, and the result is the long list of adages which warn against excess in eating and drinking. Some of these express the danger thus arising by more or less arresting comparisons; thus, Theognis's maxim finds modern equivalents in "Surfeit slays mae than the sword" (a Scottish proverb from Ray's collection), "Surfeits slay more than swords," and a Latin counterpart in "Non plures gladio quam cecidere gula." Two other Latin proverbs put the same idea in different words: "Multo plures satietas quam fames perdidit viros" (Many more men die of surfeit than of hunger), and "Multos morbos multa fercula fecerunt"[3] (Many diseases are the result of dinners of many courses). Amongst G. H.'s (George Herbert's) "Outlandish Proverbs" there is one which says, contrasting the evil effect of over-eating at suppertime with the good results following Galen's practice, "By suppers more have been killed than Galen ever cured"; and of this there seems to be a Danish equivalent which also contains one of the previous comparisons, namely, "Flere Folk draebes af Nadver end af Svaerd" (More people are killed by supper than by the sword). A laconic adage says, "Much meat, many maladies"; an outspoken one says, "Quick to the feast, quick to the grave"; an unpolished one declares that "The glutton digs his grave with his teeth"; a military one foretells that "A double charge will rive a cannon"; and a far-seeing one announces that "Feastings are physicians' harvests."[4] Hernan Nuñez[5] gives a Spanish proverb which again emphasizes the danger of heavy suppers by contrasting their evil influence with the curative effects of medicine, namely, "Mas mato la Cena che curo Avicena" (The supper kills more than Avicenna cures); this maxim has what all require to ensure complete success in the world of proverbs, rhyme. Rhyme is not indeed an essential part of a wise saying, but it fixes it in the public mind like a nail, and it may actually give it a longer life than will a large amount of contained wisdom.

Another group of maxims is concerned with the setting forth of the other side of the truth—namely, the good effect upon the health which spare diet, and especially a light supper, has. Gurney Benham[6] has succeeded in gathering together quite a number of these: There is "Light supper makes long life"; there are two Spanish ones—"Come poco y cena mas poco" (Dine lightly and sup more lightly"), and "Come poco y cena mas, duerme en alto y viveras" (Dine lightly and sup more so, sleep high up and live long"); there is an Italian one—"Chi ben sena ben dorme" (Who sups well sleeps well) which seems to contradict the others, unless, as is very likely, we understand the first *well* as meaning *wisely;* and there is a mediaeval Latin proverb which contains a double rhyme: "Ex magna cœna stomacho fit maxima poena, ut sis nocte levis, sit tibi cœna brevis" (From a great supper comes a great pain, that you may sleep lightly sup lightly). "Light suppers make clean sheets" is a saying quoted by Ray (1670); it is intelligible enough to the medical if not to the lay mind.

There is a hint of the high mental and spiritual possibilities following upon fasting in Milton's well-known lines in *Il Penseroso*:[7]

> And join with thee Calm Peace and Quiet,
> Spare Fast, that oft with gods doth diet,
> And hear the Muses in a ring
> Aye round about Jove's altar sing;

And, as Masson says, this was a favourite Miltonic principle (*vide* his *Elegia Sexta*, lines 55 to 66). According to another proverb "spare fast" brings also advantages of a more mundane nature, and a somewhat feeble rhyme commands us to "eat less and drink less, and buy a knife at Michaelmas."[8] It is conjectured that the knife is for the carving of the goose, which was brought on the day of St. Michael by the tenant to induce his landlord to be lenient regarding the rent; the date is September 29th, when the bird is at perfection, as Churchill sings:

> September, when by custom (right divine)
> Geese are ordained to bleed at Michael's shrine.

A sinister suggestion is that the knife is for the fasting man to end his life with; but we put the thought away from us, relying upon Sir William Gull's dictum, "First get your patient hungry, and then keep him so."

Horace[9] has a satire on the advantages of simple fare: "In you," he sings, "consists the pleasure of the treat, not in the price or flavour of the meat" (*non in caro nidore voluptas summa, sed in te ipso est*); in the next line he adds, "seek relishes by sweating toil" (*tu pulmentaria quaere sudando*); and, a little further on, come the words: "Hear now what blessings, and how great, a frugal diet brings, and first of all you'll be in health" (*accipe nunc victus tenuis quae quantaque secum afferat, in primis valeas bene*). *Optimum obsonium labor*[10] ("Labour gives the best relish") is a Latin proverb, which Horace possibly had in mind as he penned his satire; and "Hunger is the best sauce" is the English maxim, whilst a French one says "Il n'est sauce que d'appétit";[11] an Italian one rhymingly says, "L' asino che ha fame mangia d' ogni strame"[11] (The hungry ass will eat any kind of litter), and another Latin one puts it pithily as "Fabas indulcat fames"[11] (Hunger sweetens beans). "The stomach," wrote Seneca, "is not a hard creditor," *parvo dimittitur, si modo das illi quod debes, non quod potes* ("a small amount satisfies it, provided you give it what you ought, not what you can").

But one might continue proverbializing almost without end upon the text, so to say, that a man "ought to feed by measure and defy the physician"; it must suffice now to throw together, out of our notebooks, the following more or less familiar maxims. Here they are, let the reader choose: "The sparing diet is the spirit's feast"; "a little sufficeth nature"; "leave off with an appetite"; "lever de table avec l'appétit"; "keep a corner for a friend"; "enough is good as a feast, and better than a surfeit"; "enough is too much"; "'tis best eating when one's hungry"; and "full bellies make empty skulls." Herrick (in his *Hesperides*) has the lines:

> Go to your banquet then, but use delight
> So as to rise still with an appetite.

Sir Philip Sidney,[12] also, may be quoted: "The rules of health and long life are Moderate diet, open air, Easy labour, free from care." One proverb descends to particulars, and says, "Moderation produces clear complexion."

Some powers of clinical observation would seem to lie behind the lines:

> Eat till you're cold,
> And you'll live to grow old.
> Eat till you're hot,
> And you'll die on the spot;

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[1] Homer, *Iliad*, Bk. XV, line 95.
[2] Hippocrates, *Aphorisms*, II. 51 (Sydenh. Soc., p. 714).
[3] Seneca, *Epistolae*, 95.
[4] Kay, J. R., *Public Health*, xviii, p. 566, 1906.
[5] Nuñez, Hernan, *Refranes o Proverbios*, Valladolid, 1555.
[6] Gurney Benham: *Book of Quotations*, p. 817.
[7] Milton; Il Penseroso, *Works* (Masson's edition, i, p. 374).
[8] Howell: *Paroimiologia*, quoted by Lean, *Collectanea*, I, p. 505.
[9] Horace, *Satires*, Bk. II, Sat. ii, lines 19–20, 70–71.
[10] W. F. H. King, *Classical and Foreign Quotations*, p. 402.
[11] Ibid., pp. 235, 285, 176.
[12] Lean, *Collectanea*, vol. i, pp. 478, 503, 504, 505; vol. iv, pp. 29, 30, 36, 47.

and behind the saying, "cold after eating is a sign of long life." We think of the coolness of the skin due to the natural determination of blood to the stomach on the one hand, and of the flushed face of indigestion on the other hand, and we get the vision of long life and eupepsia in the one case and of gastric disability and apoplexy in the other.

There are, however, two sides to every truth, and it is possible to think too much about eating and drinking, for, after all, in whatever sense we take it "we live not to eat but we eat to live" (*non vivas ut edas, sed edas ut vivere posses*), or, as the French put it, "il faut manger seulement pour vivre, non vivre pour manger." This maxim goes back to Socrates, about whom it was reported, "they live that they may eat, but he himself eats that he may live" (οἱ μὲν ζῶσιν ἵν' ἐσθίωσιν, αὐτὸς δ' ἐσθίει ἵνα ζῇ).

Truly, "it seems to me," said Imlac to Rasselas (in Johnson's famous tale),[13] "that while you are making the choice of life, you neglect to live," and it is obviously a gigantic blunder *propter vitam vivendi perdere causas;* so also with eating, as Hans Busk (the elder)[14] put it into rhyme, there are those who "by little eating hope to grow the stronger, and starve themselves to death to live the longer."

But whilst it may be freely admitted that over-anxiety about what and how much food is to be eaten is not good, yet the proverbs against gluttony carry the day both in respect to number and force; and many fashionable physicians of the present time might do wisely to give to the well-fed and free-living patients who consult them the penetrating advice which Dr. John Abernethy, with some degree of masterful roughness and with almost brutal plainness of speech, administered to the wealthy Londoners of a century ago. Boldly combining dietetic treatment and ergotherapy, Abernethy shouted to his would-be patient, "Live on sixpence a day—and earn it." There is a saying that "the fire of London was a punishment for gluttony" (Bohn); and another seventeenth-century adage had reference to *the Devonshire maid's disease*, which had become somewhat epidemic. This malady, agreeing in at least one of its symptoms with the ergophobia of the present day, was thus described:[15] "She's not sick nor she's not well; she can eat and drink most woundily, but she cannot work."

The Wisdom books of the Hebrews put some of these maxims in their own way and with their own imagery. Thus, in Proverbs (xxvii, 7) we read, "the full soul loatheth an honeycomb; but to the hungry soul every bitter thing is sweet." Here the literal rendering of *loatheth* is *trampleth upon* or *treadeth under foot*, an even more powerful figure; it appears in the Vulgate as "anima saturata calcabit favum; et anima esuriens etiam amarum pro dulci sumet." A Latin echo is found in Horace's *jejunus raro stomachus vulgaria temnit*[16] ("a hungry stomach does not often despise coarse food"). In Ecclesiastes (x, 16, 17), too, morning feasting is condemned in the well-known proverb, "Woe to thee, O land, when thy king is a child, and thy princes eat in the morning! Blessed art thou, O land, when thy king is the son of nobles, and thy princes eat in due season, for strength and not for drunkenness!" "For strength" ought, perhaps, to be "in strength," that is, with self control. In another book (Isaiah v, 11) a special woe is declared unto "them that rise up early in the morning that they may follow strong drink"; and, indeed, morning feasting is held generally to be the extremity of gluttony and intemperance.

Other proverbs refer to the state of mind in which food is taken, and, generally speaking, to the hygienic accompaniments of eating. Thus, there are the familiar passages (Proverbs xv, 17; xvii, 1), "Better is a dinner (or dish) of herbs where love is, than a stalled ox and hatred therewith"; "Better is a dry morsel and quietness therewith, than an house full of feasting with strife." "Mickle corn, mickle care," is a Scottish proverb reflecting the Biblical "great treasure and trouble therewith" (Proverbs xv, 16). Another Scots saying tells us that "Welcome! is the best dish in the kitchen." So also Shakespeare (*Comedy of Errors*, Act v, scene i, lines 73, 74) makes the abbess say to Adriana, "Thou say'st his meat was sauced with thy upbraidings; unquiet meals make ill digestions"; and the advantage of having a jester to aid digestion was appreciated by the diners of the Middle Ages. "It is good to be merry at meat" is one of Ray's *English Proverbs*, and one of George Herbert's is "a cheerful look makes a dish a feast"; the latter collector of maxims has another saying which emphasizes the importance of peaceful surroundings at meal times, namely, "a little with quiet is the only diet." "Cease your chatter, and mind your platter" epitomizes the whole matter.

Other proverbs bring out the advice to eat sparingly but often, and not to have an unvarying diet. "Little and often; a good potecary's shop" is a sixteenth-century saying, from Bullein's *Bulwarke of Defence;* "often and little eating makes a man fat" is one of Ray's *Collection;* and "better meals many than one too merry" comes from Davies's *Salyricall Epigrams*. Proverbs, however, are apt to be paradoxical, and one which says "sometimes a riot's as good as a diet" seems in opposition to those which have been referred to above; but there is no real opposition here, only another aspect of the truth, for every one knows that too restricted a diet may do harm by not bringing into action all the gastric powers, and that in such circumstances a good mixed meal may work wonders, astonishing no one so much as the poor dyspeptic who has fancied himself incapable of any digestive exertion. It is true that another reading of "a riot's as good as a diet" has been found in the sinister recommendation to eat so heartily once a month as to bring on a vomit; but happy is the man whose dietetic history has in it no such dislocating events, "happy the people whose annals (dietetic and political) are vacant." But a monotonous diet is also to be avoided; "a man must not always eat one sort of meat" said Rowley in *All's Lost by Lust* (1633), and "shift of meat is good" is from Thomas Bacon's *Boke of Matrimony* (1542); and "he who eats but of one dish never wants (that is, lacks) a physician" is a somewhat enigmatical presentation of the same truth. "Variety's the very spice of life, that gives it all its flavour," wrote Cowper in *The Task;* the Latin proverb is *jucunda rerum vicissitudo;* and there is a Greek saying (from Euripides's *Orestes*), μεταβολὴ πάντων γλυκεῖα, or "the variety of all things forms a pleasure."

Proverbs in various languages gather round the well-known advice, "After dinner sit awhile; after supper walk a mile," which has been altered slightly by Beaumont and Fletcher (in *Philaster*), to suit the fair sex, into "Women should talk an hour after supper; 'tis their exercise." The advantage of rhyme (that excellent thing in proverbs) attaches also to the sayings in foreign languages which express this advice. Thus, the Latin proverb is *Post epulas stabis vel passus mille meabis;* the Venetian one is *Dopo pranza sta, dopo cena va* ("After dinner rest; after supper walk"); and the German one is, *Nach dem Essen sollst du stehen, oder tausend Schritte gehen* ("After dinner you must stand or walk a thousand paces"). The dinner referred to in these proverbs would be the midday meal, and the wisdom of putting no strain upon the body after eating freely in the hot part of the day is easily accepted; supper should be followed by an interval of time so as to ensure that digestion is completed before sleep is sought, and in the cool of the evening the time may be safely occupied by exercise. "If you would be ill, sup and go to bed," is another way in which this truth is expressed; the proverb that says, "Who goes supperless to bed, all night tumbles and tosses," is in apparent contradiction to it; but it is easy to see that what is here meant is the restlessness which follows fasting, supper taken at a suitable and sufficient time before retiring to rest being rewarded by quiet slumbers. The waning digestive powers of old age are perhaps hinted at in the saying, "He wrongs not an old man who steals his supper." Codrington, in his *Collection of Proverbs* (1672) gives the secret of long life: "To rise at six and dine at ten, to sup at six and go to bed at ten, will make a man live ten times ten"; but Hastings Gilford[17] has collected together some facts about centenarianism which shake the stability of this view, and seem to show that power to pass the fourscore years is

[13] Johnson, S., *History of Rasselas*, ch. 30.
[14] Busk, H. (sen.), *The Banquet*, 1819.
[15] Poor Robin, *Prognostications*, London, 1684 (quoted by Lean, *Collectanea*, I, p. 63).
[16] Horace, *Satires*, Bk. II, Sat. ii, line 38.
[17] Hastings Gilford, *Disorders of Post-natal Growth and Development*, p. 543, 1911.

due to an "inherent faculty of persistence of life," which is independent of environment, and even of habits.

The superiority of diet over medicinal means is borne out by a number of proverbs—some familiar, others less known. Thus there are: "Better pay the butcher than the doctor"; "Better wait on the cook than the doctor"; "The poor man's physic lies in his garden"; "Kitchen physic is the best physic"; "A good cook is half a physician"; and "The cook's boy in the kitchen . . . was the best physician among the doctors, for by his kitchen p ysic the sick was cured."[18] There is much truth in this; and many of the constipated patients who are for ever trying new purgative medicines would do well to bear in mind that the aperients which are to be had in the grocer's, the greengrocer's, and the baker's shop are safer and better in the long run than those which are purchased at the chemist's.

But it is time to bring this reading in proverbial medicine to a close, leaving the proverbs which laud or reproach certain special articles of diet—for example, alcohol, cheese, salad, etc.—and other allied matters for another occasion.

NOTIFICATION OF ALL CASES OF TUBERCULOSIS.

NEW GENERAL ORDER: ENGLAND AND WALES.

THE new General Order of the Local Government Board in England, the short title of which is the Public Health (Tuberculosis) Regulations, 1912,* which extends the principle of compulsory notification to all forms of tuberculosis, came into force on February 1st.

In a circular letter accompanying the Order it is pointed out that more than half of the deaths from non-pulmonary tuberculosis are those of children under 5 years of age, and that it is probable that a much higher percentage of the total number of persons suffering from non-pulmonary tuberculosis are children of this age. The hope is expressed that the notification of these cases will facilitate the investigation of sources of infection and assist in securing improvement in the conditions under which the children live. The circular points out that the Insurance Act contemplates the provision of treatment on a comprehensive scale for persons suffering from tuberculosis, and reiterates the general agreement of the Board with the recommendations of the report of the Departmental Committee on Tuberculosis. That committee expressed the opinion that any scheme which is to form the basis of an attempt to deal with the problem of tuberculosis should be available for the whole community, and recommended that the unit area for administrative action should generally be the county or county borough area, or in some cases groups of counties and county boroughs.

The Order directs that notification is to be made on the strength of evidence other than that derived solely from tuberculin tests. There are two forms of notification—primary and supplemental. Primary notification is to be made on a special form to be supplied by the authority, and is required in respect of every case of tuberculosis, whatever organ be affected, unless the practitioner has reasonable grounds for believing that the case has already been notified. Primary notification of every new case of tuberculosis is to be made on the specified form by every private practitioner, district medical officer of a Poor Law union, medical officer of a tuberculosis dispensary, and by medical officers of hospitals. Notifications in respect of hospital patients are to be sent in the case of out-patients to the medical officer of health for the district in which the patient's residence at the time of notification is situated, and in the case of in-patients to the medical officer of health for the district in which was the usual place of residence of the person before his admission to the hospital.

In the case of patients in Poor Law institutions or sanatoriums who have been already notified, particulars will be entered weekly on a general form showing all the patients admitted during the week. Supplemental notifications will be made on a form giving particulars of all the patients admitted during the week, and a similar form will be made up weekly of patients who have been discharged during the week.

A school medical inspector is required to notify all cases of tuberculosis which come to his notice in the course of inspections at public elementary schools. These notifications will be made on a general form to be sent in at the end of each week, and will be transmitted to the medical officer of health for the district within which the children's homes are situated. The fee to be paid to a private practitioner is 2s. 6d., to the medical officer of a hospital or Poor Law institution or to a district medical officer 1s. for a primary notification. The medical officer of a Poor Law institution is to receive a fee of 1s. for the first name on each weekly list and 3d. for each additional name.

The medical officer of health is required to keep a register with full particulars of each notification received by him, and to send to the medical officer of the county at the end of each week a statement of all notifications received during the week. Any notification addressed to him in error he is to send on to the proper district, informing the notifying practitioner that he has done so. The medical officer of health by himself, or by one of his officers, is to make such inquiries and to take such steps as may be necessary or desirable for investigating the source of infection, for preventing its spread, and for removing the conditions favourable to it. "It is contemplated," the circular continues, "that for the purpose of carrying out the requirements of this article a visit to the home of the patient will generally be necessary, and the medical officer of health will doubtless avail himself of the co-operation of the notifying practitioner. When a case is notified, inquiry should be made to ascertain the state of health of all other members of the household." The necessity of close co-operation between the medical officer of health and the tuberculosis officer of the dispensary which serves the district is insisted upon. It is suggested that the county tuberculosis officer or some other officer of the dispensary should undertake the duties or some of the duties of the medical officer of health under the Order, and for this purpose act as an officer of the sanitary authority under the direction of the medical officer of health.

A circular addressed to the board of guardians and managers of asylums and school districts points out that medical officers appointed by Poor Law authorities are not required to fill up counterfoils, as under the previous regulations, or to submit an account of fees claimed, and the sanitary authorities are not empowered to demand any such account. Relieving officers and superintending officers of Poor Law institutions, who are not medical officers, are not required to notify under the new Order, and are therefore relieved of the obligations in the Regulations of 1908, which, as well as other tuberculosis Orders and Regulations, are revoked and replaced by the new Order.

SCOTTISH POOR LAW MEDICAL OFFICERS' ASSOCIATION.

THE annual meeting of the Scottish Poor Law Officers' Association was held at the St. Enoch Hotel, Glasgow, on January 31st, with Dr. GILBERT CAMPBELL in the chair.

The report of the committee stated that much correspondence had been involved in giving possible applicants for appointments particulars of the conditions of appointments, area of district, character of roads, probable value of private practice, average outlay for expenses, and house accommodation. It had the satisfaction of announcing that no case of dismissal of a medical officer by a parish council had come to its knowledge—a fact which appeared to show that the councils were more careful in the treatment of their medical officers than had been the case in the past. Two instances were given in the report of the ungenerous and unsympathetic treatment to which medical officers are exposed at the hands of local and central authorities. In one case the parish was for a time without a medical officer, and a medical practitioner in the neighbourhood found it necessary to attend several paupers and rendered an account to the parish council; payment was refused, the inspector covering himself by saying that he had given no written instructions to the medical man. It was pointed out that the action of the inspector, though it may have been legally right, was morally wrong. Advice was given to the medical practitioner which it is believed led to an adjustment of the matter. In the other case it

[18] Lean's *Collectanea*, vol. i. pp. 478, 504, 506. 1902.

* London: Printed by Eyre and Spottiswoode, Ltd. 1912. 1d.

was found that the parish council advertised its appointment at a salary of £80 a year, the fact being that this sum was made up by £30 from the parish council and £50 from a medical aid association. The committee had had a correspondence with the Local Government Board on this subject, without, however, any satisfactory result. Many inquiries had been received with regard to the Insurance Act, the chief question being what was to be done in the case of an insured person living 10, 20, or 30 miles from the medical officer. The advice given was that the inquirers should notify the Insurance Commissioners that while they were ready to attend insured persons within a radius of 2 miles, in all other cases provision must be made by the insured person for attendance as a private patient unless the Insurance Commissioners granted an adequate mileage fee for each visit.

The report was adopted unanimously.

The report of the committee on the conditions of medical service in Highlands and Islands was referred to the Committee of the Association for consideration.

Considerable discussion took place with regard to the action of the City of Glasgow Corporation in respect of the notification of pulmonary tuberculosis. The new regulations issued some time ago by the Local Government Board in Scotland had assigned a fee of 2s. 6d. to Poor Law medical officers for each notification. The city of Glasgow refused to pay more than 1s.; the Scottish Poor Law Medical Officers' Association recommended its members not to accept, and the secretary, Dr. W. L. Muir, was instructed, if no satisfactory arrangement was reached, to raise an action against the Corporation in the Sheriff's Court.

The usual votes of thanks brought the proceedings to an end.

LITERARY NOTES.

The Poetry Review, which with its new name seems to have won new vigour, has in its February number a paper by the editor controverting the customary doctrine that Shakespeare was an optimist who took a detached view of life, and looked on it with a humorous smile for the foibles of mankind. For Mr. Stephen Phillips he was a burning spirit in revolt against the injustice of fate. The author has not given himself space enough to develop his thesis, and does little more than indicate the line of evidence he is prepared to call; but the note is suggestive, and will appeal especially to the disciples of Mr. Frank Harris. The same number contains an eloquent article on the melody of Moore by Dr. H. Macnaughton-Jones, who sets out to show Moore's versatility "in his double gift of melody and power of illustration by contrasts." Moore, Dr. Macnaughton-Jones says, felt an indivisible link between the music and the words, and in an endless variety of allegory brought to his aid all that in nature and life stirs the memory and recalls friendships, scenes, and personalities.

In his second instalment of the Scott-Baillie Letters, which appears in the January number of the *Edinburgh Review*, the librarian of the Royal College of Surgeons deals with the serious illness of Sir Walter Scott, attributed by a writer in these pages to gall stones, though Scott himself set it down to gastric cramp. Scott's illness, which first manifested itself acutely on the night of March 5th, 1817, figures at some length in his correspondence, and is familiar to all readers of Lockhart's *Life*. In February, 1819, the great writer suffered from so terrible an attack of pain that his end was thought to be near. "We find," says Mr. Plarr, "Charlotte Sophia Scott, his eldest daughter, who was soon to be married to John Gibson Lockhart, writing in her delicate Italian hand to Joanna Baillie to say that her father had not been able to take up his pen because he had been dangerously ill, and was still very weak." To this letter there is a remarkable and unexpected addendum in the handwriting of Scott himself, and, as this joint composition has not been reprinted in the *Edinburgh* we take this opportunity of publishing it here for the first time. The letters, of course, are from the Scott-Baillie collection in the library of the Royal College of Surgeons, to which they were presented by the son of Matthew Baillie. The future Mrs. Lockhart writes:

My dear Mrs. Baillie

I am sorry to be obliged to give you a very poor account of Papa's health, the spasms never leaving him for more than twenty-four hours at a time. We took the liberty of making Doctor Clarkson who attends him here write his case to your brother [Dr. Matthew Baillie] to request his advice. Papa would have wrote himself, but he has not been able to write for some time, for he has really been dangerously ill and is still very very weak, and is so very much disheartened with the constant return of the spasms that it is quite miserable, but we are in great hopes that the spasms are not so dreadfully violent these two last days. That is the only thing that comforts us. He sends you a letter from Mrs. Siddons [daughter-in-law of Sarah Siddons] he ought to have sent you long ago, but he has been so ill that he quite forgot it.

Dear Miss Baillie, I hope soon to be able to write you a better account of Papa than I can do at present and I hope that you will excuse the shortness of this letter, but I have so few minutes to spare from attending Papa and so tired from being up almost every night that I must conclude with subscribing myself in haste

Very affectionately yours
Charlotte Sophia Scott.

Abbotsford Friday 26th 1819

[The following is in Sir Walter's handwriting:]

Turn over

Dearest friend

I cannot let Sophia's dolorous epistle go without adding two lines to say that I think I am now getting really better. The combat between the medicines and the disease having been carried on entirely at the expence of my body corporate I feel after so long and obstinate a conflict as I suppose the town of Saragossa did when it had been so desperately attacked and defended. I have no apprehension of any great danger, but till of late the agony was intolerable and lasted six, seven, and eight hours without intermission. The fever is now much milder. I have reason to thank God for placing me in circumstances so much above my deserts in every respect and am much too grateful for the blessings which have attached themselves to me in every respect than disposed to murmur under the natural evils of humanity. Kind love, my dear friend, to your sister, Mrs. Baillie, the Dr., and believe me always, well or ill, most affectionately yours

W. S.

. . . My hours have been divided betwixt pain and stupidity.

In the following April Sir Walter believed himself to be face to face with death. He took a solemn leave of his children, but later, his symptoms having improved, we find him writing to Dr. Matthew Baillie, the brother of Joanna and Agnes Baillie and nephew of John and William Hunter, in a strain of relieved tension. The letter, never before published, takes high rank among the confidences of ailing genius to medical science.

Dear Sir,

The Greeks were, I believe, allowed to consult Esculapius by proxy while they were patients, but on recovery were expected to pay their grateful thanks in person. I need not say how much I was obliged by your kind attention to Mr. Clarkson's letter, which gave us all much confidence, which in the extremity of pain and subsequent exhaustion I really could not have drawn from less authority than yours.

The quantity of opium and anodynes of all kinds I was obliged to swallow during these paroxysms, often with little effect, was truly frightful. But, thank God, the last returns of the pain have been of a description so mild as to yield to the hot bath alone. I begin to sleep at nights, and crawl out on my pony by day, and my bowels seem to be regaining their natural state. I had hoped to have seen you, Mrs. Baillie, and my excellent friends your sisters this spring, but that is now impossible. Some time in the year, however, I may come up for the purpose of getting my son settled in the army.

Believe me, my dear sir,

Very sincerely,
Your obliged and grateful servant,
(Signed) WALTER SCOTT.

Abbotsford, 17th April.

Dr. Baillie wrote his interesting unpublished memoirs in August, 1818, while in attendance on George III at Windsor. In these he mentions a number of lifelong friends, but had he written after the date of Sir Walter's letter he could not have failed to describe his intercourse with his illustrious compatriot. As long ago as 1813 he had been instrumental in obtaining for Sir Walter a lock of Charles I's hair when that monarch's body was exhumed and identified at Windsor Castle. Scott had some gold mohurs melted down to form a setting for the relic, and in December, 1818, we find him dispatching twenty brace of ptarmigan to the doctor. Matthew Baillie predeceased his famous patient by ten years, dying in 1823 of old man's consumption induced by a too strenuous attention to duty. He was, indeed, a model physician, one of the finest type of a bygone school, and Scott in nowise exaggerates when

he writes to Joanna Baillie on the subject of her brother Matthew's death in October, 1823:

We have, indeed, to mourn such a man, as, since medicine was first esteemed an useful and honoured science, has rarely occurred to grace its annals, and who will be lamented as long as any one lives, who has experienced the advantage of his professional skill, and the affectionate kindness by which it was accompanied. My neighbour and kinsman, John Scott, of Gala, who was attended by our excellent friend during a very dangerous illness, is mingling his sorrow with mine, as one who laments almost a second father; and when in this remote corner there are two who join in such a sincere tribute to his memory, what must be the sorrows within his more immediate sphere of exertion!

FRIENDLY SOCIETIES AND THEIR AGED AND INFIRM MEMBERS.

IN the JOURNAL of February 1st, p. 251, we dealt somewhat fully with this question, but make no apology for returning to it in view of its importance, and especially as an interesting instance of action by one of the important friendly societies has just come to our notice. Section 15 (2) of the National Insurance Act states that:

"The Regulations made by the Insurance Commissioners . . . shall require the adoption by every Insurance Committee of such system as will secure:

(*c*) The provision of medical attendance and treatment on the same terms as to remuneration as those arranged with respect to insured persons, to members of any friendly society which, or a separate section of which, becomes an approved society who were such members at the date of the passing of this Act, and who are not entitled to medical benefit under this part of this Act by reason either that they are of the age of 65 or upwards at the date of the commencement of this Act, or that being subject to permanent disablement at that date they are not qualified to become insured persons:"

It may be of interest to note the annotation following this section of the Act in the book *National Insurance*, by Carr, Garnett, and Taylor (second edition), which has a preface by the Right Hon. D. Lloyd George, M.P.:—

There is an interesting history attached to this paragraph (*c*), as the persons here alluded to are not insured persons under the Act. The subsection is the result of a mutual arrangement between the British Medical Association and the friendly societies. The persons must have been members of a friendly society on or before December 6th, 1911, though they need not have reached the age of 65 or become permanently disabled until July 15th, 1912, or up to January 1st, 1913, if the Act does not commence till then.

It is quite evident, and it is strongly impressed upon the memories of those who were present at the time, that, at the time the above-mentioned "mutual arrangement" was arrived at, the friendly societies were extremely anxious that the operations of the Act should not prevent them from fulfilling the obligations which they then felt they were under to their old members who would not be insurable under the Act. The representatives of the Association agreed that these old and disabled members should not be charged any more than insured persons for their medical attendance, although it must be obvious, from a merely business point of view, that they might well be charged at a much higher rate. Friendly societies all over the country are now, however, trying to evade this obligation by attempting to induce medical men to undersell one another and to take these old members at less than the Insurance Act rate. This has apparently failed in London, and the following letter, which has been sent to a member of a friendly society lodge in London, is an example of meanness which it may be hoped is not likely to be followed:

February 3rd, 1913.

Dear Sir and Bro.,

In reply to yours to hand, Dr. ——— has ceased to be surgeon to the Court, his notice resigning having expired.

The Court have no surgeon now, and you must find your own doctor in future, and pay him yourself.

Of course you will not in future be charged the 1s. per Qr. for surgeon. You can thank Lloyd George for this.

Yours, fraty.,

(Sgd.) ——— Sec.

No one will think us anxious to excuse Mr. Lloyd George from any of his responsibilities in regard to this Act, but this seems to be an instance of attempting to put upon his shoulders a responsibility which clearly lies elsewhere. The friendly society has probably received for many years the contributions of the unfortunate member and now that he has reached a time of life when he is most likely to require medical attendance, it calmly informs him that he must shift for himself, and that it washes its hands of all responsibility for his medical attendance. The fact is, of course, that medical attendance can easily be got for such old members of friendly societies if the societies are prepared to pay a fair price for it, but they have been so accustomed to getting it at charitable rates that they cannot bring themselves readily to pay the fair price. We trust that full publicity will be given to this miserable attempt of one of the largest friendly societies in the kingdom to evade its responsibilities to the very class of members who should have most claim on the sympathy and fraternal feeling which, we have always supposed, was the basis on which friendly societies have been built up.

CONTRACT MEDICAL ATTENDANCE ON UNINSURED PERSONS.

THE State Sickness Insurance Committee of the British Medical Association had under consideration, at its meeting on February 6th, the question of fees and other conditions concerning attendance upon uninsured persons, a matter which had been referred to it by the Council.

The Committee adopted the following minute:

That in general in considering the necessity for obtaining the approval of the State Sickness Insurance Committee mentioned in a minute of the Council of January 29th, 1913 (see SUPPLEMENT, page 131), the following principles must be adhered to:

(*a*) Free choice of doctor.
(*b*) Remuneration not less than that given in respect of insured persons—that is, 9s. including medicines.
(*c*) Persons earning over £160 not to be treated under contract terms at all.
(*d*) Juveniles (under 16) to be treated at special rates.

That the Committee realizes that the conditions in certain areas will not allow of the above terms being obtained; and that in these circumstances the approval of the State Sickness Insurance Committee for a scheme involving a less payment may be given provisionally when the local profession can show that the economic conditions in the area demand it.

That one of the conditions necessary for the approval of schemes at lower rates of payment shall be the inclusion amongst the rules of a statement that the approval by the Association has been given to the rates only because of special economic conditions.

MOTOR CARS FOR MEDICAL MEN.

Small Cars.

IN the notice of the Bayard cars published in our issue of January 25th, p. 177, there were several slight errors. In addition to the 8-h.p., 10-h.p., and 14-h.p. cars mentioned, the company also supply 11-h.p., 12-h.p., and cars of higher power than the 14-h.p. referred to. The engines of the 8-h.p. and 10-h.p. cars are monobloc, while the engines of the 14-h.p. cars are cast in pairs; the 8-h.p., 10-h.p., and 11-h.p. have three speeds. Wire wheels are fitted only to the 8-h.p. and 10-h.p. as standard cars. The wheel bases of the 8-h.p., 10-h.p., and 14-h.p. cars are 7 ft. 5 in., 8 ft. 3½ in., and 9 ft. 5 in. respectively, and the size of the cylinders of the 8-h.p. car is 60 by 120. The foot-brake acting on the back wheel is used only in the 12-h.p. cars.

THE report presented to the annual meeting of the Royal Infirmary, Sunderland, stated that there was urgent need to rebuild the administrative block erected in 1868, which had become inadequate to the needs of the institution. The amount received from workpeople during the year was £7,778 out of a total of £12,633. The children's hospital, opened on March 26th, had already received 795 patients into its wards, and the number of patients treated at the Heatherdene Convalescent Home was 575, an increase of 166 on the previous year. Dr. Rowstron had been appointed honorary assistant physician to the infirmary, and his place at the Children's Hospital had been taken by Dr. Herbert Bruce Low, and Dr. Heslop had been re-elected assistant surgeon to that institution.

British Medical Journal.

SATURDAY, FEBRUARY 8TH, 1913.

THE DOCTOR IN POLITICS.

LORD ILKESTON, who played a conspicuous part for many years in Parliament, was an example of one who attained high distinction both in medicine and politics. Staunch to his political colours, he did not give up to party what was meant for his profession. Allusion is made elsewhere to the work he did on behalf of the profession in Parliament, but necessarily it is impossible to relate in detail all that he did during a parliamentary career extending over twenty-seven years.

It may be interesting, however, and perhaps stimulating even at this time of day to recall the strong views to which he gave expression some thirty years ago as to the duty of medical men to render service to the State in public capacities. In his presidential address delivered at the annual meeting of the Birmingham and Midland Counties Branch of the British Medical Association, on June 28th, 1883, he dealt with the political powerlessness of the medical profession, indicated its causes and suggested remedies. After pointing out that the tendency of the Legislature for some years before had been to give more and more attention to social and sanitary questions, he referred to the Medical Act of 1858, which when he spoke it was expected would shortly be amended, and which was, in fact, amended in 1886. The position then existing was, he said, the result of more than a quarter of a century's education on the part of the Association and of its Medical Reform Committee. "As far back even as 1831 the profession had begun, under the leadership of that honoured veteran, Dr. A. P. Stewart, to demand an improved educational course, and in 1833, at the second annual meeting of the Association, medical reform was discussed in Dr. Barlow's address. From the beginning even until now we have consistently and continuously pleaded 'that instead of having sixteen modes (now nineteen) of entering the profession, one only should be adopted, and that the profession at large should be represented on its Medical Council.' In 1840 these demands were first drafted into shape in Mr. Wakley's bill, and then session after session attempts were unsuccessfully made to pass some measure. The history of these attempts from 1837 to 1858 forms about as depressing a piece of reading for any one jealous of the position and influence of his profession as I can well imagine, except the dismal diary of our struggles and failures from 1858 till now. In both periods we have a similar catalogue of petitions presented and forgotten; of deputations courteously received and dismissed; of Select Committees and Royal Commissions framing laborious reports; of remonstrances unheeded; of hopes raised and disappointments reached. When at the end of the first twenty-five years' campaign we did at last obtain the Medical Act of 1858, we won neither of the essentials demanded by the Association; neither a single mode of entering the profession, nor direct representation on the General Medical Council. Direct representation, we were told, could not be granted till a register of the profession was made to enable it to vote. For a quarter of a century the register has been complete, the medical practitioners of the United Kingdom have contributed from their narrow means £150,000 for the support of a council to represent and defend the interest of the colleges in opposition to the wishes of the profession; and, as a result of our taxation, to leave us the worst governed medical body in Europe." He went on to say that after an experience of the Act extending over some seven or eight years a sense of its failure caused the Medical Reform Committee to resume its work, and in 1869 a petition, signed by some 10,000 practitioners, was presented, in which direct representation and a uniform mode of admission to practice were demanded as essential reforms. As the Medical Council showed itself indifferent to the demands of the profession, reform was sought through parliamentary channels. "Year after year medical bills have been introduced and withdrawn because we as a profession have had no adequate medical representation in the House." Warned by the long weariness of waiting, he said, broken by repeated disappointment and defeat, the Association had accepted the bill drawn up as the result of the labours of its Medical Reform Committee, and especially of its Chairman, Dr. E. Waters of Chester, giving four seats in a Council of eighteen for the representatives of the 24,000 practitioners in the United Kingdom. "Surely," he said, "such small success, after such long labours, must convince us of the political impotence of the profession to which we belong."

He made an appeal to the profession to take its due share in the public work of the communities in which it lived. "The nature of our daily work is to many of us," he said, "so absorbing in its interest and demands so much of our time for calm, careful reflection and for scientific investigation that we turn with the dislike of philosophers from the noise and dust of the forum. With some of us possibly there may be a lurking fear that pronounced opinions on political and social questions are apt to injure a doctor in public estimation and so to lessen his professional influence and his pecuniary profits. In the sad quietude of the sick chamber, where the finer issues of life and death have to be weighed, the brawling politician would jar on the sensitive nerves of the sufferer. Truly; but we need not be brawling politicians; nor need we allow political questions to so occupy our thoughts as to interfere with that absolute concentration of mind on the case of every patient which is essential to the most perfect performance of our work. Every man needs some variety in the direction and subject of his thoughts; as a class we are apt from lack of this variety to become, as compared with other classes, rather narrow-minded and wanting in sympathy with the great movements going on around us."

What Lord Ilkeston said so well in 1883 has its application to-day, and it suggests again the question that has so frequently been discussed, Why are there not more doctors in Parliament? It would be a very decided benefit to the profession if it had a larger share in the making of laws and in the management of affairs, and it would be even more beneficial to the public if the special knowledge of medical men were placed more directly and more fully at its service in matters concerning the suppression of disease and the preservation of the public health.

In regard to the duty which the medical profession owes the public in this respect, we may quote what

was said by Mr. Cleveland, then President of the United States, at the celebration of the New York Academy of Medicine of its semicentennial anniversary. After paying the profession the conventional compliments demanded by the occasion, he went on to point out certain evils, such as the imperfect isolation of some communicable diseases, the want of adequate protection against dangers to health from unwholesome water and noxious surroundings, and the practically unchecked prevalence of quackery, and he hinted that, although the doctors were not responsible in a professional sense for these results of the insufficiency of the laws, or of laxity in their execution, it was doubtful whether as citizens they were doing all in their power to remedy the situation. "We cannot but think," he said, "that the discoveries and improvements in the medical practice which we now enjoy are dearly bought if the members of the profession in their onward march have left behind them their sense of civic obligation, and their interest in the general public welfare. We cannot accuse you of utter neglect of your duty to the country, and yet we cannot keep out of mind the suspicion that if your professional work in exposing evils were more thoroughly supplemented by labour in the field of citizenship, these evils would be more speedily corrected. If laws are needed to abolish abuses which your professional investigations have unearthed, your fraternity should not be strangers to the agencies which make the laws. If enactments already enforced are neglected or badly executed, you should not forget it is your privilege and duty to insist upon their vigorous and honest enforcement. Let me also remind you of the application to your case of the truth embodied in the homely injunction—if you want a job well done do it yourself. If members of your profession were oftener found in our national and State legislative assemblies ready to advocate the reformatory measures you have demonstrated to be necessary, and to defend your brotherhood against flippant and sneering charges of impracticability, the prospect of your bestowal upon your fellow men of the ripened results of your professional labour would be brighter and nearer." These words may find an application in this country not less than in the United States. It may be hoped that the profession will lay to heart another remark of Mr. Cleveland to the effect that "no object of personal ambition and no activity of professional life should be permitted to withhold from our government the tithe of devotion and service due from its thoughtful and intelligent citizens."

This injunction applies not only to Parliament, but to other elected bodies which discharge important duties in the body politic. Dr. Cuff reminds us, in a letter published this week, that there never was a time when the obligation on medical men to take their due share in local administrative work was more imperative. Dr. Cuff declares that doctors are conspicuous by their absence from county councils, town councils, rural councils, and all bodies in which the local government of the country is vested. Though this exaggerates the extent of the default, there is a great measure of truth in the general accusation, and the approaching county council elections afford an opportunity for making it good. It is true that the methods of the party canvasser may be distasteful, and that the successful candidate may find that his new duties as a councillor make serious calls upon his time and energy. But we may recall Bacon's words in the preface to *Maxims of the Law*: "I hold every man a debtor to his profession; from which as men of course do seek countenance and profit, so ought they of duty to endeavour themselves by way of amends to be a help and ornament thereunto."

PLACENTA PRAEVIA AND PRE-MATERNITY TREATMENT.

PROFESSOR PAUL BAR has been writing on the subject of placenta praevia,[1] and what he has to say on that matter is always worthy of attention. There are, however, certain statements embedded in this particular article which are in danger of being overlooked because their position is not prominent and because they are not emphasized. Yet they are, as we take it, of extraordinary importance.

Professor Bar has been dealing with the somewhat sombre matter of the maternal mortality in placenta praevia, and he has found that his hospital statistics give him a death-rate of 9.2 per cent.; in other words, in 153 cases of placenta praevia he lost 14 mothers. These deaths were spread over the period from 1897 to 1912, but they were not all in the same hospital though all in Paris. Professor Bar was in charge of the Saint-Antoine Maternity from 1897 to 1907, but from the latter year to the present time he has been at the Clinique Tarnier. Naturally enough he has been comparing the results obtained in the two hospitals, and he has found that whilst in the former he lost 10 mothers from infection following the placenta praevia, in the latter he had lost none from this cause.

This difference obviously calls for inquiry, and even for close scrutiny. Of his 153 cases of placenta praevia, 108, or about two-thirds, were treated in the maternity department of the Saint-Antoine Hospital, and 45, or about one-third, in the Clinique Tarnier. The total maternal mortality, as has been said, was 14; 4 of these deaths were due to the haemorrhage, whilst 10 were caused by infection and its sequelae. In placenta praevia, therefore, the mother runs more risk to her life from infection than from haemorrhage and the acute anaemia induced by it. This conclusion is printed in italics, and quite rightly, since it is a very important fact for the obstetrician to bear in mind; but why should all the infection-deaths have occurred in the one hospital?

We gather that Professor Bar's methods of dealing with placenta praevia did not undergo any essential change when he went to the Clinique Tarnier; and there is no hint that the two institutions differed in any way in their sanitary conditions. There were, however, two marked differences in the management. In the Saint-Antoine, in cases of urgency, the resident doctor or student (he is called *l'élève de garde*) had to do the best he could for the patient; in the Clinique Tarnier, under similar circumstances, the chief physician or his substitute did what was needful. Professor Bar does not place great weight upon this difference, indeed he puts it after the other, although we can easily see that with the best will in the world the learner of practical obstetrics could hardly render as much assistance as the practised senior. It is on this other difference that he lays stress, and it is on it also that we would insist.

When patients came to the Saint-Antoine suffering from some pathological state connected with pregnancy, no special pressure was put on them to induce them to remain in the hospital. In other words, they were probably told to come back when the pains had begun. At the Clinique Tarnier, on the other hand, many pregnant patients came for advice;

[1] *Arch. mens. d'obstét. et de gynéc.*, Ann. I, No. 10, pp. 162–176, 1912.

and it was very rare for a woman, when counselled to stay in the hospital, to disregard the recommendation. Now, what was the result? In the one hospital, where no effort was made to hospitalize (so to say) morbid pregnancies, placenta praevia cases were rushed into the wards, bathed in their blood (as Professor Bar says), having had several floodings, and having suffered several attempts at treatment, including in all probability a packing of the vagina. In the other hospital there was always a chance that the diagnosis of placenta praevia would be made in the course of the pregnancy; that the patient would be in what we call in Britain the prematernity or pregnancy ward, and that therefore she would be within reach of the best treatment when the first sign of haemorrhage appeared. In the former case the patient may be infected before she reaches the hospital; in the latter, there is a far better chance of making the whole process aseptic. In the Parisian statistics one can hardly fail to find a remarkably strong argument in favour of the idea of providing all maternity hospitals with prematernity or pregnancy wards, an idea which was pressed upon the profession by Dr. J. W. Ballantyne of Edinburgh in this JOURNAL[2] as long ago as the early part of 1901.

Two questions may be asked: Can placenta praevia be diagnosed in pregnancy before the occurrence of haemorrhage? and did the facilities for the treatment of pregnancy cases in the Clinique Tarnier diminish the deaths from haemorrhage? With regard to the former, the answer is, Yes. If on abdominal palpation the head be felt at brim of the pelvis, and if on vaginal examination, made at the same time, the cervix be found to be thicker than usual with a soft substance lying between the fingers and the presenting part, then the diagnosis, even if there have been no slight premonitory bleedings, is fairly certain. To the latter question Professor Bar's statistics cannot give an answer. There were four deaths in all due to haemorrhage, and two of these occurred in the first half and two in the second half of his fifteen years' experience. We cannot affirm that the risks from the bleeding will be less, although we think that logically they ought to be so; but we have the sure evidence that the risks of septic infection are much reduced.

We wonder in how many maternity hospitals in this country prematernity or pregnancy wards have been established since the plea for such things was published in these pages in 1901. We know that in the same year the Edinburgh Royal Maternity Hospital set aside first a bed and later a ward for pregnant patients suffering from the maladies of gestation, and we know that reports[3] of the cases dealt with there have been from time to time put on record, but it would be interesting to know how many other hospitals have adopted an idea to which Professor Bar has given support in a manner all the more striking because apparently unintentional.

FAULTS IN THE CONSTITUTION.

THE resolutions of the Special Representative Meeting in January with reference to the need for an alteration in the regulations of the Association in order that it may be possible to obtain more quickly than at present the decision of the Association in cases of urgency, and requesting that the postal vote should be utilized on such questions, or such as are concerned with any suggested future line of policy, were referred by the Council at its quarterly meeting last week to the Organization Committee, with instructions to treat the matter as one of urgency. Recent events have shown the necessity of proceeding with this matter without further delay. Action will be facilitated by the fact that the difficulty which has now arisen was foreseen and the whole subject very fully discussed five years ago. The letter which Dr. Henry Davy of Exeter addresses to us this week will be read with interest, for he writes from a very full acquaintance with the subject. As President of the Association in 1907–8, he endeavoured to reconcile conflicting opinions, and after discussion between some of those who had taken a leading part in drawing up the draft of the Charter and representatives of the opinion that it was defective in the respects indicated above, a compromise was provisionally reached which was embodied in resolutions moved on behalf of the Cardiff Division at the Annual Representative Meeting in Sheffield in 1908 by Dr. Maclean. The first amendment proposed that the referendum whenever taken should be by means of voting papers to every individual member of the Association. The mover pointed out that under present circumstances probably not more than 10 per cent. recorded their votes, since they could only vote by attending a meeting of the Division. This, he declared, was an unsatisfactory condition of things. The proposal to introduce the principle of a postal referendum into the regulations of the Association embodied in this motion was, however, rejected by 63 votes to 34, and the present system, to which the term "referendum" has been applied, was retained. It is, Dr. Davy says, "nothing more than an appeal by the Council from the decisions of meetings of Divisions, as expressed by Representatives instructed at these meetings, back again to the meetings of the Divisions." It is not a referendum in any sense known to any national constitution, and would be laughed out of court if proposed as part of the political organization of this country.

Dr. Davy in his letter refers also to the mode of election of Representatives by the members of Divisions. At present a Division can elect its Representative either by the votes of those members who happen to be able to attend a general meeting, or it can, if it so decide, make the election by voting papers sent to each member of the constituency. It was proposed as part of the compromise at Sheffield that the election should always be by voting papers, but this also was rejected at that time.

Another point made by Dr. Davy is that the existing rule, according to which a Representative is instructed by a meeting of his constituency, does not work satisfactorily, since the instruction may be given at a meeting attended by a very small proportion of the members of the Division, and the Representative may therefore be called upon to vote at the Representative Meeting without having any opportunity of ascertaining the opinion of the majority of his constituents, and therefore possibly contrary to their wishes. Dr. Davy suggests a method by which this difficulty could be met. Upon its feasibility we are not prepared to express any opinion. What seems obvious is that some means must be found by which every member of the Association shall be able to exercise his legitimate influence in determining the policy of the Association, and no scheme can be successful which does not take fully into account the special conditions of medical life, and the fact that the

[2] BRITISH MEDICAL JOURNAL, vol. i, 1901, p. 813.
[3] BRITISH MEDICAL JOURNAL, i, 1908, p. 65; *Journ. of Obstet. and Gynec. of the Brit. Empire*, xv, 93, 169, 1909; *Internat. Clinics*, vol. iii, 1911, p. 211.

exigencies of his calling and the distance he may have to traverse may prevent him from attending a meeting at a stated hour and place.

The Association has been placed in a false position, and has suffered in consequence in the eyes of the public and the profession alike. Means should speedily be taken to prevent the occurrence of such a misfortune again. The public has laughed at what it looks upon as another proof of its doctrine that doctors are not good men of business. Dr. Davy explained the position to the public in a letter to the *Times* published on January 17th, and our contemporary, in commenting on the matter, wrote: "The actual difficulty in which the Association finds itself must be attributed largely to a faulty constitution. No doubt the underlying causes go deeper than mere methods of administration; but if a postal referendum had been taken instead of relying on Divisional and Representative Meetings the true situation would have been more clearly revealed and the danger have been avoided. . . . The inference is obvious that, before taking any other decision, it would be wise to ascertain the real trend and strength of opinion among the members by an individual vote. We presume the Representative Body has power to do this." The Representative Body, however, has not got this power, and the Association under its present constitution has no constitutional means of ascertaining the opinion of the majority of its members.

THE MOTIVES OF THE PROFESSION.

On Sunday last the Bishop of Manchester, preaching in his cathedral on behalf of the hospitals of the city, said that medical practitioners knew the poor as no other profession—not even the clergy—knew them; and he had, he said, been "filled with great indignation to witness how little has been understood the attitude of the medical profession towards the Insurance Act, as if they had never worked without payment, as though they had never treated cases out of sheer charity. It has been assumed too often that the whole profession has been haggling after sixpences, whereas, so far as I can judge, they have desired only that the work which they had under the Insurance Act should be thorough and not scamped work, and that the diseases of the poor should receive the same careful attention as the diseases of the rich. In all this they had in reality been fighting the battle of the poor, and they deserve the gratitude of the nation for the endeavour which they have made to secure conditions under which medical attendance under the Insurance Act should be a reality and not a sham. This is, at all events, my impression, and, in justice to the profession to which we are all indebted, I am bound to record it." The Insurance Act, he went on to say, brought no relief for diseases requiring special medical or surgical treatment, and none to the uninsured, among whom were many who most needed it. Hospitals and dispensaries would continue to be necessary for most of the worst cases and for the most needy classes, and for the present the Act had not diminished the work of the hospitals. The loss to the nation would be great if the hospitals ceased to be voluntary institutions; it would no doubt be possible to provide excellent infirmaries at the public cost. The workhouse infirmaries were in many respects admirable, but it would, he said, be a poor day for the national life when the self-denial of the nation took the form of rates and taxes. The Bishop showed a true insight into the motives by which medical practitioners are inspired, and it is pleasant to record the sympathetic attitude of a distinguished member of a sister profession.

MEDICAL SERVICE IN THE HIGHLANDS AND ISLANDS OF SCOTLAND.

Medical men in the Highlands and Islands of Scotland owe a debt of gratitude to the member for Orkney and Shetland—Mr. J. Cathcart Wason—who, in his place in the House of Commons and at public meetings, has taken every opportunity to show the disabilities under which medical practice is carried on in the Highlands and Islands. In a letter published elsewhere in this issue Mr. Cathcart Wason draws attention to two points—namely, security of tenure and the doctor's house. It is an anomaly that in England parochial medical officers have fixity of tenure and medical officers of health have not, while in Scotland the position is reversed. As Mr. Cathcart Wason points out, Scottish Secretaries have always refused to sanction any change in the arrangements. The Poor Law Medical Officers' Association of Scotland has over and over again agitated to have fixity of tenure granted, but the demand has never been met. If fixity of tenure—with, of course, the right of the Local Government Board to institute an inquiry where it might deem it necessary—was one of the conditions of parish medical appointments a better class of candidate would be forthcoming. At present the parochial medical officer is at the mercy of a board, one or two members of which may have had some social quarrel to which the doctor is unwittingly a party, and in a spirit of revenge may deprive the doctor of his appointment. This is known to have happened more than once in the Highlands and Islands. The outstanding grievance to which Mr. Cathcart Wason refers is that in many parishes it is difficult, and often impossible, for the doctor to get a house, or even to get suitable accommodation, in the village or hamlet where he practises, befitting a man in his position. The evidence given by the witnesses before the Committee is quite in keeping with the facts which are within our knowledge. We are pleased to learn, from Mr. Wason's letter, that it is proposed to introduce a bill to deal with the matter; the measure, we are sure, will meet with the sympathy and support of the members of the House of Commons, as many of them—when visiting the Highlands in pursuit of sport—must have been struck by the very meagre accommodation provided for medical men in comparison with the manses erected for the army of clergymen who have invaded the Highland parishes during recent years. It will be seen that a supplementary estimate for the present financial year, issued last week, allots a sum of £10,000 for mileage and other special charges in the Highlands and Islands of Scotland. Thanks to the efforts of Mr. Cathcart Wason and other Scottish members of Parliament, the outlook for medical men in their districts is becoming brighter.

THE FEAR OF ANAESTHETICS.

Dr. Dudley W. Buxton has published in the *Contemporary Review* an excellent article designed to allay the fear of anaesthetics, a fear aroused in the minds of many laymen by the rather large number of cases of death under chloroform which occurred during some past years. The personal equation of the human being, he says, must always render the use of a powerful anaesthetic a delicate and intricate matter. Danger cannot be completely eliminated from empirical methods, but he points out that the recent report of the Special Chloroform Committee of the British Medical Association has done much to lift the premier anaesthetic "from the limbo of empiric practice to a more rational and scientific level"; but there is still need for legislation which shall check the wanton abuse of one of the most important discoveries of modern times. In the opening part of the article, which is entitled "Sleep and her twin sister, Death," Dr. Buxton traces rapidly the evolution of anaesthetics from the nepenthes of Helen to chloroform. He mentions Humphry Davy's statement that nitrous oxide might be used as an

anaesthetic in minor operations, which is of course familiar to all students of the subject, but the fact remains that after the effect of the substance had been clearly pointed out no one paid the smallest attention to it for over forty years. Nothing could be more definite than Humphry Davy's statement, which we quote once more, as many people, even at the present time, seem to be unacquainted with it. In 1800 Davy, in experimenting with the gas, found that it relieved pain, and gave his experience in the following words: "The power of the immediate operation of the gas in removing intense physical pain I had a very good opportunity of ascertaining. In cutting one of the unlucky teeth called *dentes sapientiae*, I experienced an extensive inflammation of the gum, accompanied with great pain, which equally destroyed the power of repose and of consistent action. On the day when the inflammation was most troublesome I breathed three large doses of nitrous oxide. The pain always diminished after the first four or five inspirations, the thrilling came on as usual, and uneasiness was for a few minutes swallowed up in pleasure. As the former state of mind, however, returned, the state of organ returned with it." In his book *Researches, Chemical and Philosophical, Chiefly Concerning Nitrous Oxide and its Respiration*, Davy pointed out the possible applications to which the anaesthetic gas might be put by surgeons. We again quote his own words: "As nitrous oxide in its extensive operation appears capable of destroying physical pain it may probably be used with advantage during surgical operations in which no great effusion of blood takes place." It will be seen that nothing could be more definite than this. Eighteen years later, in 1818, a paragraph in the *Journal of Science and the Arts*, probably written by Faraday, drew attention to the fact that "when the vapour of ether is mixed with common air and inhaled it produces effects very similar to those occasioned by nitrous oxide"; but this plain intimation of the anaesthetic properties of ether also fell on deaf ears. Dr. Crawford W. Long of Jefferson, Jackson County, Georgia, guessing, possibly from this hint of Faraday, that ether, which was then in use in what were called "ether frolics," might deaden the sense of pain under the surgeon's knife, tried it in practice in 1842 with success. He did not, however, apparently take much pains to make this discovery known, and from this we should gather that he did not appreciate its importance. It is to an American dentist named W. T. G. Morton that we owe the successful application of ether in surgery. He had long been looking for an anaesthetic, and the use of ether was suggested to him by Dr. Charles T. Jackson, a distinguished chemist of Boston. To him belongs the credit of having got this great discovery accepted, just as to Simpson belongs the glory of having introduced and popularized the use of chloroform, the trial of which was suggested to him by Mr. David Waldie. It is, as Sydney Smith somewhere says, not the man who gives the first hesitating hint of a new truth, but he who shouts it from the housetop, and gets people to listen to him, who is the real discoverer. Dr. Buxton refers briefly to the psychology of the anaesthetic dream sleep, a subject on which we have often dwelt, giving particulars from the well-known story of Oliver Wendell Holmes's supposed discovery of the riddle of the universe, which resolved itself on his awakening into the cryptic formula, "A strong smell of turpentine pervades the whole." Dr. Dudley Buxton pleads strongly for the scientific use of chloroform by exact methods. "The subject," he rightly says, "is no longer a mere handicraft but a science; and the art which it teaches is based upon physiological knowledge and experiment." An attempt has been made recently to get a law passed forbidding the use of anaesthetics by any person not possessing a medical qualification; but, so far, nothing has been done in this direction, and thus, Dr. Buxton says, "the menace of a grave danger to the public remains."

THE SUPPOSED INFERIORITY OF THE FIRST AND SECOND BORN.

In a memoir published in 1907,[1] Pearson described the results of an inquiry which tended to show that the earlier born members of families were more likely to develop phthisis than their younger brethren; he also concluded that the fertility of phthisical stocks was, if anything, above the average. Very similar results were reached by Heron in his analysis of asylum data.[2] Both these conclusions, if established, would be of considerable importance, and it is not, therefore, surprising that they have been questioned. We have received a copy of an essay by Mr. T. B. Macaulay, a former President of the Actuarial Society of America,[3] who is of opinion that Pearson's results depend upon statistical fallacies and are consequently worthless. In Mr. Macaulay's judgement, the first conclusion, namely, that elder-born children are more likely to develop the disease in question, is due to the fact that, partly owing to phthisis being a disease which develops mainly in adult life, partly because sanatorium patients are usually adults, the diseased members of the families studied, who formed the starting point of the inquiry, were past childhood. But since a man of 40, if he have brothers and sisters, is more likely to be the eldest in family than a boy of 15 with the same number of brethren, a selection of persons above 15 years of age will contain a higher proportion of eldest sons than the population at large. Mr. Macaulay's argument is vividly expressed in the following sentences which we quote from his address to the Eugenics Congress. He remarks: "I can begin with this very audience now before me. It is certain that very many of you have younger brothers and sisters who are yet but boys and girls. The percentages of elder born among you will therefore certainly be decidedly in excess of those for the younger born. Would I be justified, however, in assuming from this that the composition of this audience proves that first and second born children are mentally superior to their younger brothers and sisters? It would be very pleasant if I could pay you that flattering compliment, but truth compels me to say that all that such statistics would really prove would be that children and babies are too young to attend this congress." Mr. Macaulay seems to have overlooked the fact that not only children and babies were excluded from the congress but also persons of any age who happened to be dead. If we had a gathering confined to survivors of the Balaclava charge and then considered only those veterans who had living brothers and sisters, we should no doubt discover an overwhelming proportion of eldest sons. But if we do not draw such a line, it is not obvious that the percentage of first-borns among men of 80 should be greater than among children of 1 month, unless there be correlation between longevity and order of birth. The argument, therefore, is sophistical. Mr. Macaulay's second objection to Professor Pearson's work, namely, that the fertility of stocks when determined from the children is artificially increased, since the large families are relatively more likely to be represented in a sample of children than are the small families, has recently been advanced by Weinberg[4] in a slightly different form. It is well known that when fertility is estimated from data based on the statements of children as to the number of their brethren, the mean fertility per family may be overestimated, owing to the weighting of each family with the number of children it contains. Pearson[5] specially considered this point some years ago. If it be possible,

[1] K. Pearson, *A First Study of the Statistics of Pulmonary Tuberculosis*, London, 1907.
[2] D. Heron, *A First Study of the Statistics of Insanity*, etc., London, 1907.
[3] *The Supposed Inferiority of First and Second Born Members of Families—Statistical Fallacies.* By T. B. Macaulay, F.I.A., F.A.S. Pp. 17 + 3. (Herald Press, Montreal.)
[4] *Arch. f. Rassenhygiene*, xii, 1910, p. 634.
[5] *Phil. Trans.*, A, vol. cxii, p. 261.

owing to the possession of complete pedigrees, to sort out the children into their respective families, so that any family is not counted more than once, and if sterile marriages be excluded from the normal data used for comparison, the force of the objection is notably weakened. As will have been gathered from the foregoing remarks, we are not greatly impressed by the cogency of Mr. Macaulay's arguments, but this is not to say that the conclusions of Pearson and Heron are self-evidently just. The importance of the matter is so great that we hope the staff of the Galton laboratory will consider some of the difficulties ordinary readers are likely to meet with in studying their results. Thus the sanatorium patients dealt with by Pearson seem each to have come from a separate family. It is not, *prima facie*, obvious that the proportion of first-borns among the tuberculous members of these families should be the same as that prevailing among all the members of the stocks taken together. The conclusion may be correct, but it certainly seems to require further elucidation. The matter is, however, a technical one, and cannot fittingly be discussed in these columns. We have only noticed the subject because it illustrates the intrinsic difficulty of statistical problems having a direct bearing upon public health teaching.

THE PORTRAYAL OF THE BLIND IN JAPAN.

FROM earliest times the blind have been favourite subjects for the artist's brush, and portraits of the blind alone do much to reveal the standard of painting at various epochs. The subject was treated with great realism by the Greeks, but the most relentless realism was displayed by the Dutch painters. With the exception of the Dutch school, however, Japanese artists are, according to Professor Greeff,[1] the most faithful portrayers of blindness in its many aspects. In an interesting paper he brings out many curious features of the life of the blind in Japan, and of their portrayal by Hokusa, who was born about the year 1759. He ranks in European opinion as Japan's greatest painter, yet he appears to have been ignored by his contemporary fellow countrymen, and to have died in poverty and obscurity. After middle age he issued a series of sketches representing life in Japan, and he depicted as many as twenty-four distinct types among the blind. His vivid realism lays him open at first sight to the charge of caricaturing. But Professor Greeff thinks that such an interpretation is unjust, and that the artist has caught true, but possibly fleeting, expressions of the blind. Some appear happy and scarcely affected by their blindness, others bear the stamp of sorrow and resignation, others look stupid, and others again are portrayed as idiots. Their attitude, gait, and expression betray the action of a common affliction on characters of widely different type. Massage is an accomplishment commonly acquired in Japan by the blind, whose sense of touch is naturally well developed; and, as massage has been in common use since the eighth century, the blind masseur is well established. Massage is to-day prescribed for almost every form of illness, and it is commonly employed after baths or exercise. It is therefore not surprising that even the smallest villages in Japan can boast a blind masseur, and that he has been frequently depicted in the exercise of this art. Professor Greeff reproduces two such scenes depicted by Japanese artists, who evidently have caught characteristic expressions of both the masseur and his subject. The former, in one sketch, wears an expression of grim determination as he apparently digs his elbow into the small of the back of his subject. The latter's quaint expression of resignation scarcely suggests pleasurable sensations. In the other sketch, the masseur's expression denotes extreme despair and exhaustion, while the fatuous and languishing expression of his subject suggests the placid contentment of a pig being tickled.

[1] *Deut. med. Woch.*, January 2nd, 1913.

THE ANALYSIS OF COLOUR VISION.

PROFESSOR A. W. PORTER and Dr. F. W. Edridge-Green reported recently to the Royal Society the result of further researches into the question of the negative after-images and successive contrast with pure spectral colours. The object was to ascertain the appearance of pure spectral colours after the eye had been fatigued by light of a known wave length or situated in a portion of the spectrum between two known wave lengths. They used lights of only moderate intensities for a short time, and their experiments thus differed from those of Burch, who used lights of extreme intensity, or from those of Edridge-Green and Devereux Marshall, who used very weak lights for a prolonged period. The eye was kept rigidly fixed during the fatiguing process, and a very clear after-image was produced. The results obtained could all be explained on the Edridge-Green theory. It was found that the complementary to the exciting light was never strengthened in the spectrum on the screen by the after-image, and the after-image was not surrounded by the primary colour as it should be according to the Hering theory. According to the Young-Helmholtz theory, the effect of fatiguing the eye with a monochromatic region should cause the uniform grey band to vary in colour and luminosity across its breadth, but this did not occur. On the Helmholtz theory the after-image should change colour on fading because of the varying amount of fatigue of the hypothetical colour sensations, but this was not the case. Regions like the violet, after fatigue to red, should be very little affected, but they were the most affected. The fatigue light should most affect the region used for the fatigue, but again this was not the case. Yellow should change to green after fatigue to red, or to red after fatigue to green, but this was not so. These facts, as well as some others, are used by the authors to still further disprove the theories of Hering and of Young-Helmholtz and as arguments in favour of the Edridge-Green theory, which does explain all these phenomena.

TUBERCLE BACILLI IN THE BLOOD.

PROFESSOR LYDIA RÁBINOWITSCH,[1] whose careful and exact work on tuberculosis always claims the serious attention of pathologists, has recently published some interesting details in regard to the presence of tubercle bacilli in the blood of consumptives. She points out that twenty-two years ago Virchow expressed his conviction that tuberculin "mobilized" tubercle bacilli. Orth, at that time in Göttingen, came to an almost identical opinion, and showed that the action of tuberculin was to produce a reactive change in the tuberculous foci which led to the liberation of the bacilli and their appearance in the circulating blood. Several investigators confirmed this observation, but others, including Ehrlich, Guttmann, and Kossel, had only negative results. Professor Lydia Rabinowitsch states that she did not succeed while working at the old Koch Institute in demonstrating bacilli in the blood; this, she now thinks, was due to the methods then in use. Utilizing the Stäubli-Schnitter method, she has recently obtained positive results in guinea-pigs and rabbits infected with tubercle bacilli three or four weeks previously, in whose blood no bacilli could be found. The animals were then treated with tuberculin and the existence of bacilli in the blood was demonstrated both microscopically and by inoculation into fresh guinea-pigs. This result was obtained with small as well as with large doses of tuberculin, although not with the same regularity. Some years ago she examined with Jessen of Davos the blood of a number of phthisical patients, and found that bacilli could be detected in the blood in about 33 per cent., but the effect of tuberculin was not then investigated. The importance of the presence of tubercle bacilli in the blood after the absorption of tuberculin

[1] *Berl. klin. Woch.*, January 20th, 1913.

is self-evident, and calls, therefore, for further observations in order that its significance may be thoroughly understood. No satisfactory deduction can be drawn until it has been established whether tubercle bacilli are usually absent from the blood in tuberculosis. Some at least of the negative results have been due to inefficient methods, and before a definite step forward can be made it will be necessary to ascertain whether some method cannot be devised which will reveal with certainty the presence in the blood of even a few bacilli. It may then appear that they are always or frequently present in tuberculous infection with pyrexia. It seems possible that the bactericidal action of substances contained in the serum may limit the life of the bacilli in the blood under ordinary conditions, and in this case the number of living bacilli might be extremely small. Professor Rabinowitsch raises the question whether the acid-fast bacilli found are true tubercle bacilli, for such organisms have been found in apparently healthy persons. Bacmeister and Rüben have put forward the view that they are not tubercle bacilli at all, chiefly because of the results obtained when the blood has been injected into rabbits. Professor Rabinowitsch has no difficulty in demonstrating that this argument is untenable, and that the point cannot be decided by experiments on rabbits. There is already experimental evidence that tuberculin can liberate a sufficient number of bacilli to render their recognition in the blood by existing methods possible in a majority of cases. Further, we have evidence to the effect that in man tubercle bacilli may under circumstances which have yet to be determined be present in the blood. Before we are justified in considering the effect of this observation on the therapeutic value of tuberculin, further evidence is required in regard to the presence or absence of tubercle bacilli in the blood when no tuberculin has been employed. We understand that investigations in this direction are at present being carried out.

TUBERCULOUS PERITONITIS AND STERILITY.

ABDOMINAL surgery, more accurate registration of hospital cases, and bacteriological research have taught us a great deal about tuberculous peritonitis, especially in women. General opinion, based on recent practice and observation, seems to hold that surgical measures are inadvisable unless the tuberculous disease is limited to one organ, so that the knife may pass through perfectly healthy tissues and the ligatures lie safely in those tissues. Otherwise grave complications may probably ensue. It is also believed that although extensive tuberculous deposits may disappear under medical treatment, the functions of the internal organs may be very seriously disturbed. That this is not invariably the case is shown by a very definite instance reported recently by M. Delassus,[1] where the diagnosis was confirmed by two abdominal sections. The patient was a pale, sickly lady aged 29, who had been married five years. There was no family history of tubercle, but she grew thin and weak and ascites developed. M. Delassus found that there was no evidence of thoracic disease, but that ill-defined solid deposits could be felt in the abdomen and Douglas's pouch. They were not tender. The abdomen was tapped. For a few weeks daily injections of 5 cg. of sodium cacodylate were administered with good general results, but the peritoneum filled up again, although the patient grew stronger. M. Delassus opened the peritoneal cavity by a median incision and found tuberculous deposits widely disseminated; the omentum was infiltrated, and on the surface of the uterus and Fallopian tubes were characteristic nodosities. There were no adhesions between the intestines. Nothing was removed. Six months later, as fresh effusion had occurred into the peritoneum and incisional hernia had developed, M. Delassus, in January, 1911, operated again and found that the peritoneum presented the same appearances as before; it was dried and closed. After convalescence the patient became pregnant within eighteen months of the date of the second operation and was delivered of a living child. In September, 1912, she was in perfect health. No bacteriological examination was made, but there seems to be little or no doubt that the peritonitis was tuberculous. There were none of the signs of the more purely inflammatory forms of peritonitis, such as multiple adhesions, and the after-history showed that the solid bodies were not disseminated malignant growths. There appeared to be no obstruction of the tubes, which so often complicates any disease of the upper part of the female genital tract, and necessarily involves sterility, not only because the passage of the ovum is thus impeded, but also because destructive inflammatory changes occur. The case seems to prove the possibility of gestation after tuberculous peritonitis, so that no patient who recovers should be held as hopelessly sterile, though marriage could hardly be advised in the instance of a single patient. In the case of any married woman it is important to note the relation of tuberculous peritonitis to pregnancy, as there is some difference of opinion as to the same relation of pulmonary tuberculosis, which instead of being extremely rare is one of the commonest of all grave diseases, and does not act as an immediate check on conception and pregnancy. The case is incomplete in one respect, as it affords no evidence as to whether the local changes in gestation act beneficially on the adjacent peritoneum or whether the tuberculous disease may not become more active than ever after the pregnancy has ended—a phenomenon not unknown in phthisis.

[1] *Bulletin de la Soc. d'Obstét. et de Gyn. de Paris, Lille, etc.*, November, 1912, p. 898.

THE INFANT'S CRY.

"THE infant does not speak," says Dr. Rousseau-Saint-Philippe,[1] "he is *in fans*." Etymologically, he must not speak; but he cries, and we find his language in his cry. It is part of the physician's business to learn his language, and so to interpret the child's sensations. The infant comes into the world with a cry, and the writer quotes Longet, who declares that this first cry is a shout of triumph, for the bonds of intrauterine existence have been burst by the unknown force which dominates all the phenomena of life. There is, however, a more prosaic reason for this initial cry—namely, the contact of the child's body with the cold atmospheric air. The healthy babies cry loudly, while those which are congenitally weak cry feebly and little, and the doctor should be on his guard in the case of the silent and the sleepy ones. It is, of course, always important to find out the cause of crying; but there are babies who cry for no real cause, and these are the screamers ("les criards"), generally the offspring of defectives, alcoholics, and neuropaths, and likely to grow into neuropaths themselves by and by. But there is usually a real cause. Among the external ones are what may be called "the four p's" (p's in French, at least)—the pricks of parasites, such as fleas, lice, and bugs (puces, poux, punaises), and of pins badly placed; but there are others—such as the tightness of clothes, the presence of diapers soiled with faeces or urine, hot bottles, extremes of temperature, and especially very hot days. The internal causes are harder to find, but it is of great importance to discover them. Fortunately, the commonest, which is hunger (and perhaps thirst), is the most easily cured; it ceases when the child has had the breast. If it does not so cease, it may mean that the milk is poor or scanty, and then weighing the infant will clear up the diagnosis. But it may be due to other causes, of which the second in frequency, according to Dr. Saint-Philippe, is internal discomfort due to

[1] *La clinique infantile*, xi, p. 17, January 1st, 1913.

dyspepsia, and especially to dyspepsia with colic. Crying now is increased by giving the breast; it comes on suddenly and ceases abruptly when wind or a stool is passed; if it be the result of a full bladder, it disappears with micturition. The third of the internal causes is pain, and again the intestinal tract may be at fault; but now it is more than discomfort—it is sharp suffering, as in cases of enteritis, and particularly, says Saint-Philippe, of athrepsia, as was pointed out long ago by Parrot. Of course many causes of pain may exist, among which teething and local maladies of the bones and skin may be named. A fact of some importance is, as was pointed out by Dr. Genaro Sisto, of Buenos Aires, that persistent crying, in the absence of other causes, may be due to hereditary syphilis; if it be, it ceases with the commencement of the specific treatment. Much, then, may be learnt from the cry.

OBSERVATION AND JUDGEMENT.

THE address delivered at the inauguration of the present winter session of the Royal Veterinary College, London,[1] by Major-General F. Smith, C.B., C.M.G., F.R.C.V.S., has been printed. In it he called attention to the necessity of bearing in mind the relation of observation to judgement when treating man or animals. Observation depended largely on the personal factor. There were, he said, many varieties of observation, and probably no man possessed them all to an equal extent. There were some people who never forgot a face—the mental picture formed was ineradicable; some never forgot horses they had once seen, others could never remember them. There were people so unobservant as to locality that they did not recognize a street they had often seen before, and others who never failed to remember one along which they had once passed. Similarly there were men who could see clinical features and differences when they were pointed out, but failed to find them for themselves, yet the recognition of these differences in practice was of the utmost importance, and there were even commoner features in connexion with the sick or their surroundings, which some utterly failed to notice. He aptly turned attention to Zadig and the queen's dog, the most often quoted passage from Voltaire's witty story, and transformed Zadig into a veterinary surgeon, who, by his common-sense powers of observation, reported on the state of the regal stables and their inmates after simple inspection, during which he never spoke a word nor asked a question nor received any spoken information. This report showed that the stables and the horses were, to say the least, in a highly unsatisfactory condition. Judgement, Major-General Smith declared, was infinitely more difficult than observation, and required a longer apprenticeship. The mental analysis of symptoms and evidences constituted the essence of judgement, which was directed by experience and the application of the senses. His advice to the student of the diseases of horses was such as students of disease in man may consider with profit, for infants, like animals, are "dumb," and there are also men and women who seem unable to give any precise account of their symptoms and thousands more who mislead us by their false conclusions, which is worse. "In order to be good practitioners I urge you," he said, "to train your observation and judgement, and be, as far as possible, independent of outside help in the diagnosis of disease. Look and see. . . . The absence of speech is no very serious disadvantage excepting in cases of lameness, and though the truth-saving advantages of a dumb patient may be neutralized by the untruthfulness and gross inaccuracies of those in attendance, the observant practitioner can silently afford to neglect most of what he hears."

[1] *Journal of Comparative Pathology and Therapeutics*, January, 1913.

THE SEMON LECTURES.

WHEN about three years ago Sir Felix Semon, in the full vigour of his faculties and the high tide of professional success, announced his intention to retire from active practice—a resolution made more often than it is carried out—his brother laryngologists all over the world, in Germany, Hungary, Austria, Russia, Scandinavia, Denmark, the Low Country, France, Italy, Spain, and America resolved to express their esteem for the man and their respect for his scientific achievements and for the work he had done to raise the status of the speciality to which he had added distinction. The presentation, which was accompanied by a sum of money subscribed by British laryngologists, was made at a banquet in July, 1909, at which the late Sir Henry Butlin, who was in the chair, after referring to Semon's achievements in the science and art of laryngology, and to his success in establishing the *Centralblatt für Laryngologie*, said that it was only after reading the tributes paid to him on that occasion by laryngologists and laryngological societies all over the world that he had seen him in his true aspect —"the defender of the laryngological faith throughout the world, the constant protector of all oppressed bodies of laryngologists; the man whose name is spoken with affection and respect in every place where laryngologists do congregate." Sir Felix Semon determined to devote the money gift which he had received on this occasion to the advancement of laryngology, and we had the pleasure of recording in June, 1911, that the Senate of the University of London had gratefully accepted his offer to transfer to the University the sum of £1,040 presented to him, for the foundation of a university lectureship and medal in laryngology. The first lectures under this foundation were given by Dr. Peter MacBride, formerly lecturer on the diseases of the ear, nose, and throat in the University of Edinburgh, at University College. At the first, on January 22nd, when Sir Rickman Godlee, President of the Royal College of Surgeons of England, was in the chair, the subject dealt with was Sir Felix Semon's personal history, his career, and the circumstances which influenced it. The second, on January 24th, when Dr. Watson-Williams occupied the chair, dealt with his work and its influence on laryngology, with special reference to general policy, laryngeal paralysis, and malignant disease.

THE SENSORY FIBRES OF THE PHRENIC.

THE sensory fibres of the phrenic nerve, discussed by Dr. Kidd in a paper recently noticed in this JOURNAL (January 11th, 1913, p. 86), have been investigated by Dr. G. C. Mathison[1] in the performance of a series of experiments upon the innervation of respiratory muscles. Part of the evidence for the existence of these sensory fibres he obtained was indirect, part direct. The indirect evidence was furnished by the rise in the carotid blood pressure resulting from electric or other stimulation of the central end of the cut phrenic nerve in anaesthetized dogs, rabbits, and cats; no rise, but even a fall, was observed when the anaesthesia was deep and produced by chloroform. Similarly, pinching and stretching the pericardium evoked a rise of blood pressure, which was distinctly lessened but not entirely abolished by section of the phrenic nerve in the neck; the pericardium has apparently a further sensory supply. In curarized dogs, pinching the peripheral muscular portion of the diaphragm on the thoracic side also produced a rise of blood pressure not entirely abolished by section of the phrenics; Mathison argues that this structure also, therefore, apparently possesses a further sensory supply, probably through the intercostal plexus. Stimulation of the central end of the cut phrenic was never found to produce anything in the nature of an expiratory reflex,

[1] The Sensory Fibres of the Phrenic Nerve. By G. C. Mathison, M.D. *Review of Neurology and Psychiatry*, London, 1912, x.

and it is probable, therefore, that sensory impulses passing up the phrenic nerves play little or no part in the normal regulation of the respiratory movements. The direct evidence that sensory fibres travel in the phrenics of the dog was furnished by dissection. On the right side these fibres leave the phrenic nerve near the diaphragm, and ascend in two strands along the inferior vena cava to be distributed to the pericardium, one branch going to the auricular portion, an arrangement corresponding with that described by Luschka in man. Two branches given off from the left phrenic as it goes behind the heart pass to the pericardium.

ROYAL DENTISTS.

THE choice of a hobby is largely a matter of individual temperament; and, whereas one man will seek refuge from fatigue and worry in books or music, or some other sedentary occupation, another can only find refreshment for mind and body in severe manual labour. The need for some wholesome relaxation, however, is felt by high and low alike; and even kings have not disdained to occupy their leisure hours in working with their hands like the meanest of their subjects. Louis XV, one of the idlest of men, strove to dissipate his continual boredom by means of a private printing press set up up for him in his apartments at Versailles by Quesnay, Madame de Pompadour's favourite doctor; and Louis XVI, his grandson and successor, became in course of time a skilful locksmith. Neither of these monarchs, however, was as versatile in his amusements as the ill-fated hero of Flodden, King James IV of Scotland, who was not only an amateur carpenter and blacksmith, but a dentist to boot. The accounts of his private expenditure, extracts from which are given in Miss Green's *Lives of the Princesses of England*, prove that although he indulged his eccentric tastes at the expense of those who surrounded him, James knew how to console his victims for the sufferings they endured at his hands. That the royal dentist's involuntary patients were well paid for their complaisance is shown by the following extract, quoted by Miss Green, though one wonders why the unfortunate Kynnard was less generously treated than the anonymous "fellow" who preceded him, and if the latter proved a more refractory patient than the barber:

	£	s.	d.
Paid for a psalter, three compasses, a hammer, a turcase to take out teeth, and two pair of beads, to the King	0	7	8
Item, to ane fellow because the King pullit furht his tooth	0	14	0
Item, to Kynnard, the barber, for twa teith drawin furht of his hed be the King... ...	0	14	0

This bald statement of the old accountant is oddly reminiscent of Major Drury's amusing story of the savage potentate who, like the Scottish king, was afflicted with "a mania for experimental surgery," and cheerfully sacrificed the teeth of his unhappy courtiers in the pursuit of his most inconvenient hobby.

TRANSMUTATION OR SYNTHESIS?

AT the meeting of the Chemical Society on Thursday Professor Norman Collie, of University College, and Mr. Patterson, of Leeds University, described recent experiments they had made independently which show that on subjecting hydrogen to bombardment by the cathode rays both neon and helium make their appearance. The essential point appears to be that these elements are produced under conditions which exclude the possibility of their appearing in the apparatus as impurities, a suggestion which it will be remembered was put forward when Sir William Ramsay, a few years ago, stated that under the influence of radium emanation various transmutations occurred. In the new experiments neon and helium are collected in relatively large quantities—that is, in terms of thousandths or tens of thousandths of a cubic centimetre. Another interesting feature of the discovery is that whereas the most familiar instance of transmutation—namely, that seen in the breakdown of the radium atom—is an instance of a highly complex atom resolving itself into simpler and more stable constituents, the present case is one of the formation of elements which must be regarded as being among the simplest known. They are the first to appear in the nascent stars, and it is only when these have cooled down—as in the case, for instance, of our own sun—that the existence of the other more complex elements known on the earth can be determined by the spectroscope. It is difficult to avoid drawing the conclusion that in these experiments we may be witnessing the occurrence, on a small scale, of the conditions under which the worlds of the universe came into being.

Medical Notes in Parliament.

Medical Service in the Highlands and Islands. — MR. Ainsworth asked the Secretary for Scotland, on February 4th, whether his attention had been drawn to the necessity of an improved medical service for the Highlands and Islands of Scotland, and also to the fact, as made clear by the report of Sir John Dewar's Committee, that the rateable value of the Highland counties was insufficient to meet the demands of modern local government, especially as regards medical service; and what steps he proposed to take to remedy the present state of affairs in these counties.—Mr. McKinnon Wood said he had carefully considered the report of the Committee, and his knowledge of the Highlands and Islands led him to agree entirely with their view that an improved medical service was urgently needed. The report had also received the sympathetic attention of the Government. A special item for the current year dealing in part with the matter appeared in the Supplementary Estimates, and the whole subject was receiving the most careful consideration.—Mr. Cathcart Wason asked the Secretary to the Treasury, on February 4th, if he was aware that doctors in the Highlands and Islands were under liability to attend insured persons without receiving any adequate compensation for journeys by land and sea which might often occupy twenty-four hours or more; and, in view of the fact that doctors only accepted service under the National Insurance Act believing that they would receive reasonable consideration, if he would take an early opportunity of stating what provision will be made.—Mr. Masterman said that the Supplementary Estimates included provision of £10,000 for mileage and other special charges in the Highlands and Islands of Scotland in connexion with the medical attendance and treatment of insured persons.—The Marquess of Tullibardine inquired if that was the full sum which was going to the service, or was there to be a larger sum later on for those other points which were not strictly under the Insurance Act.—Mr. Masterman replied that the report of the Committee was now under consideration.

Royal Commission on Vivisection.—The Home Secretary stated, on February 5th, that he was now in a position to give practical effect to nearly all the recommendations of the Royal Commission on Vivisection. The new administrative arrangements were already far advanced. The inspectorate would be increased to four by the appointment of two additional inspectors, and the present senior inspector would be made chief inspector for the whole country. The new inspectors would be qualified medical men who would give their whole time to the work, and the appointments would be made at an early date. It was also proposed to constitute, in accordance with the recommendation of the Commission, an advisory body to guide the Home Secretary in the exercise of his powers, and the Royal Society and the Royal Colleges of Physicians and Surgeons had consented to assist in the selection of the members of this Committee. He proposed to publish the names in due course, and hoped that the committee would be constituted at an early date.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

The Milk Supply.

In its quarterly report as to action taken under the London County Council General Powers Act, 1907, relative to the milk supply, the Public Health Committee reported to the Council on February 4th that during the three months ended December 31st, 1912, 720 samples of milk were taken at London railway termini. The examination of 772 samples (some taken in the previous quarter) was completed, and 51, or 6.6 per cent. proved tuberculous. Of 3,589 cows examined at various farms throughout the country, 15, or 0.4 per cent., were found to be suffering from tuberculosis, and the sale of milk from these cows in the county of London was stopped. The Committee stated that since the Act came into operation on July 1st, 1908, the examination of 10,638 samples of milk had been completed, 1,071, or 10.1 per cent., proving tuberculous. Of 55,947 cows examined, 637, or 1.1 per cent., were found to be affected by tuberculosis of the udder.

Commenting on the announcement that the Milk and Dairies Bill, 1912, had been dropped, the Public Health Committee reviewed the efforts it has made every year since 1907 to obtain powers to deal with contaminated milk, the Council's proposals being withdrawn time after time on a promise of general legislation by the Government. In view of the urgent necessity for action, the Committee regarded it as a matter for extreme regret that another session had passed without any real efforts being made to deal with the subject of the milk supply, and that the Prime Minister had stated that he was not prepared to give any pledge that facilities would be afforded for the Milk and Dairies Bill in the next session of Parliament.

Tuberculosis Dispensaries at Lambeth.

The Lambeth Borough Council, at a meeting held last week, adopted the general outlines of a scheme for the establishment of tuberculosis dispensaries in the borough. It is proposed to establish a central dispensary in Effra Road, Brixton, close to the Town Hall, to be entirely under the control of Dr. J. Priestley, M.O.H., and an assistant tuberculosis officer. A branch dispensary for patients living in the northern part of the borough will be established at St. Thomas's Hospital. The governors of the hospital are prepared to establish and maintain a branch dispensary where all persons, both those insured under the National Insurance Act and those not so insured, may be treated for tuberculosis. The department will be controlled by the governors and staff of the hospital and independent of control of all outside bodies except such administrative control as devolves on Dr. Priestley, as medical officer of health for the borough. The governors have appointed Dr. R. C. Wingfield, medical officer in charge of the department, and beds in the hospital will be placed at his disposal for the treatment of suitable cases. He will not visit homes in the borough for the purposes of treatment.

With regard to the whole scheme when presented to the council, Dr. J. Baird proposed that it be referred back to the committee for further consideration with a view to rediscussing the other commitments the council were bound to take up under the scheme of the Local Government Board. The provision of the dispensaries was only a part of the scheme, and they were bound to provide sanatorium treatment. Mr. W. Gough-Cook seconded. Mr. J. E. Wood protested against any further delay. Mr. Frank Briant, a member of the London Insurance Committee, said he failed to see to what further financial burdens the council was committed by establishing the dispensaries. The London County Council had practically agreed to take over one of the institutions of the Metropolitan Asylums Board for a sanatorium, and the borough council would not be called upon to establish one. The resolution to refer the report back to the committee was defeated.

Dr. J. McKeith proposed that the resolution of the council adopted at a previous meeting relating to the establishment of a branch tuberculosis dispensary at St. Thomas's Hospital be rescinded, and that the Public Health Committee consider and report as to the establishment and maintenance by the council itself of a branch dispensary in North Lambeth. The council had previously declined to invite voluntary aid in the establishment of dispensaries, and had agreed that they should be under the control of and maintained by the borough council. Under the scheme for the establishment of the branch dispensary at St. Thomas's Hospital the council gave up its right of control over the tuberculosis officer, who would have the treatment of a large number of patients. The council had decided not to have voluntary assistance, and yet patients would be compelled to go to St. Thomas's Hospital to be treated as charitable cases. Let the hospital have its own tuberculosis department, but the council, for the sake of economy, should not shirk its responsibilities. Dr. J. Baird seconded. Alderman Evans said that the governors of St. Thomas's Hospital had offered the council all the facilities and help they could, and the council, considering what it would have to contribute in other ways in general expenses, was extremely fortunate in being able to accept the offer. He failed to see what more could be secured than the acknowledgement by the governors that the whole scheme was to be under the administration of the medical officer of health. Mr. Frank Briant said that rejection of the offer of the governors of the hospital would be to the detriment of the hospital itself and the students attending it. Mr. J. E. Wood pointed out that it would cost the council £5,000 to fit up a dispensary similar to that at St. Thomas's Hospital. The resolution proposed by Dr. McKeith was defeated by a large majority.

MANCHESTER AND DISTRICT.

Sanatorium Benefit in Manchester.

The Manchester Sanitary Committee has just issued a lengthy report dealing with tuberculosis in Manchester, and it would appear that it has at last, after numerous abortive proposals, arrived at a scheme for sanatorium benefit which may be accepted. At the next meeting of the City Council the Finance Committee will propose that application be made to the Local Government Board for sanction to borrow the sum of £44,945, which is estimated to be the capital cost of the scheme. The population of Manchester is about 720,000, and according to the report of the Special Committee on Tuberculosis, which recommends one tuberculosis dispensary for every 250,000 of population, there ought to be three dispensaries in Manchester. It is considered, however, that one central dispensary will be much more convenient and economical, and will allow of better combination of the public health work and clinical work, and it is proposed that the Hardman Street Dispensary should be used for this purpose, being extended, as required, to accommodate both the public health and the dispensary staffs. It will be used as a receiving and clearing house, a centre for diagnosis, observation, and treatment, a centre for examination of contacts and after-care, an information bureau and educational centre. The existing staff of five physicians will be retained at salaries of £250 a year each, and they will act as consultants to general practitioners. There are also to be four whole-time tuberculosis medical officers, the senior to receive not less than £500 a year, and to be independent of the medical officer of health in clinical matters, and the junior officers to receive £300 a year. The staff of the Consumption Hospital will attend at Hardman Street as usual, and two of the whole-time officers will attend in the afternoons of the first five days of the week. In this way, if patients are seen on an average once a fortnight, it will be possible for 840, or even 1,000, to be seen regularly and without undue hurry. Eight nurses are to be appointed as a minimum, and, if more are required, arrangements are to be made with the District Nursing Association; some extra clerks will also be necessary. Recommendations for sanatorium benefit are to be made through the medical officer of health, the senior tuberculosis officer being appointed as his deputy for the purpose, but the whole-time staff are to be in administrative subordination to the medical officer of health.

If the advice of the Special Committee on Tuberculosis were taken, that there should be one sanatorium for every 5,000 population, about 150 beds would have to be provided in sanatoriums, and the same applies to beds in other institutions. But it is stated that the incidence of tuberculosis in Manchester is greater than in the rest of the country, in the proportion of nearly 3 to 2, so that more than the average number of beds will be required. At present there are 150 beds at the Baguley Sanatorium, and it is proposed to double these by adding 100 for men and 50 for women, giving a total of 300 beds which would be available for moderately advanced cases. There are also to be 62 beds at the Crossley Sanatorium for early cases only. In addition, arrangements are to be made to take over from the South Manchester Guardians the Abergele Sanatorium, where there are at present 50 beds. This gives a total of 412 beds available if the arrangements are carried out in full. It was originally proposed to provide for the treatment of surgical cases at the Manchester Royal Infirmary, the Ancoats Hospital, the Children's Hospital, and the Swinton House Schools, but these proposals have had to be dropped—at any rate, for the present—owing to the expense and difficulty of making arrangements.

From the point of view of infection, tuberculosis of the lungs is regarded as the most dangerous form of the disease, entailing the greatest expense in prevention and treatment, but the recent Order of the Local Government Board, which came into operation on February 1st, and makes all forms of tuberculosis compulsorily notifiable, was anticipated, and allowance is made for the additional expense that will be entailed in investigations and administration consequent on the Order.

It is recommended that two special committees be formed—one a committee of medical men, whose business it will be to devise methods of tracking down the disease and securing early diagnosis. It is suggested that it might consist of a medical representative from each of the principal voluntary medical institutions, three representatives of medical practitioners, Professor Delépine (Director of the Public Health Laboratory), Dr. Niven (Medical Officer of Health), and the senior whole-time tuberculosis officer. The second committee, to be called the Tuberculosis Care Committee, is to be a fairly large one, containing representatives of the university, the corporation, the Insurance Committee, the clergy, and medical practitioners, representative employers of labour, and representatives of numerous societies for social welfare, such as the Charity Organization Society, the City League of Help, and others. This committee is to consider, among other things, how to assist needy families when the breadwinner is in a sanatorium, and to provide for consumptive patients who cannot continue at their ordinary work some suitable employment in which they may engage without danger to the health of others. It is proposed to place the sum of about £500 at the disposal of this committee for the provision of food and clothing.

It is estimated that the total capital expenditure will be about £44,945, and the annual expenditure about £39,600. The income of the Manchester Insurance Committee under the head of sanatorium benefit will be about £15,000 a year, of which £6,000 is to be retained for domiciliary treatment and £700 for provision of food and clothing, and the remaining £8,300 is to be handed to the corporation for the treatment of the insured suffering from tuberculosis at the dispensary or in institutions. This leaves a sum of £31,300 to be provided, half of which will be defrayed by the Treasury and the other half out of the rates. It is expected that a saving of £7,000 may be effected by the transference of fever cases from Baguley to Monsall, and that a number of minor savings are possible, but when everything is taken into account the scheme will probably entail a total increase in the Manchester rates of at least £5,000 a year.

LIVERPOOL.

Death of Dr. Carter.

Following so soon on the death of Dr. O. T. Williams we have this week again to record the death of a distinguished Liverpool physician. Dr. Carter died on February 2nd after a short illness. For some four years he had retired from the Professorship of Materia Medica and from his various hospital appointments, but he maintained a lively interest in medical life and progress in Liverpool till the end.

Changes in the School.

The death of Dr. Williams has caused a vacancy on the medical side of the Royal Infirmary. Already there are three strong candidates in the field.

The impending retirement of Mr. Damer Harrisson from the Northern Hospital will cause a further change in the teaching staff in Liverpool.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Committee on the Extension of Medical Benefits to Ireland.

In reply to Mr. John Redmond, in the House of Commons on February 4th, Mr. Lloyd George stated that he had appointed a committee

> To consider and report as to the advisability of applying to Ireland the provisions of the National Insurance Act, 1911, with respect to medical benefit, and as to the alterations, legislative or otherwise, which, in the event of such provisions being applied, would be desirable in the systems for affording medical relief at the present existing.

The members of the committee are Lord Ashby St. Ledgers, chairman; Mr. Hugh T. Barrie, M.P. (Londonderry N.), Mr. Joseph Devlin, M.P. (Belfast W.), and Mr. J. C. R. Lardner, M.P. (Monaghan N.), Mr. J. Bradbury, of the Treasury, Mr. J. T. Stafford, medical member of the Local Government Board for Ireland, Mr. J. A. Glynn, and Dr. W. J. Maguire, chairman and medical member respectively of the National Health Insurance Commission for Ireland, and Mr. W. L. Micks, a member of the Congested District Board for Ireland. In reply to Mr. Booth, who asked whether the Committee would simply have to report whether the medical benefit system in operation in England should be applied to Ireland or would have power to suggest some alternative system, Mr. Lloyd George, while declining to express any opinion, stated that the Committee would have to consider the Irish position as a whole, and he thought it probable that it would have to adapt it in some way or other to the conditions existing in Ireland.

The Committee has been asked to proceed speedily with its inquiry, because, if the extension of medical benefit to Ireland is recommended, a bill to amend the Insurance Act will be introduced by the Government next session, which will begin next month. The Committee met on the day of its appointment and arranged to take evidence from the urban districts in the north of Belfast on February 17th and 18th, to meet in Dublin on February 19th, 20th, and 21st, where evidence will be taken from Dublin, Cork, Limerick, and Waterford. The first part of the inquiry will be directed to ascertain the extent of the demand for medical benefit in the urban areas, and whether it should be at once instituted. The inquiry as to the rural areas will not, it is said, be made until after Whitsuntide.

Need for Representation of the Poor Law Medical Officers.

The members of the County Cork Branch of the Irish Medical Association, at a meeting held last week, passed a resolution calling on the Committee of Council of the Irish Medical Association at once to take steps to secure that representatives of the Irish Poor Law medical officers be placed on the Committee appointed by Mr. Lloyd George to consider the question of the extension of medical benefits to Ireland, as the question was very urgent, and vitally affected the interests of those officers. They also requested that members of the Irish medical profession should be put on the proposed committee.

The medical practitioners of South Tipperary have decided that in that district it will be regarded as an unprofessional act for any medical man, either in private or Poor Law practice, to give certificates for sick benefits to insured persons pending a final settlement of the

question—this to include workhouse hospitals, county infirmaries, and any other hospitals.

MIDWIVES.

The Women's National Health Association has outlined a scheme for midwives employed under the Local Government Board. If a board of guardians appoints as midwife for a dispensary district a woman having the qualifications laid down by the Insurance Commissioners for a midwife attending women on behalf of whom the maternity benefit is to be applied, the Women's National Health Association will endeavour, through its branches or through special committees to be formed for the purpose, to bring up the midwife's salary to £1 a week, with bicycle and allowance for uniform, on certain conditions; the principal conditions are that the midwife so appointed works under the local branch of the Women's National Health Association in her spare time; that she attends to the mother and baby for a month after birth, giving special care and attention to the care and management of babies; and that she takes no private practice save that provided for the wives of insured persons or women who are themselves insured.

The Kenmure Board of Guardians wrote to the Local Government Board asking the Board's advice on the scheme, and the Local Government Board has replied advising the guardians to wait for further information before agreeing to the fundamental alteration in the duties and present system of control and remuneration of the dispensary midwives.

TREATMENT OF SURGICAL TUBERCULOSIS.

Under the auspices of the Women's National Health Association two lectures were given in Dublin last week explaining the work that is being carried on at Lord Mayor Treloar's Cripples' Hospital and College, at Alton, Hants. The lectures were delivered by Dr. Gauvain, Medical Superintendent of the Home, and Sir William Treloar. An unfortunate misunderstanding arose about the first lecture, for which invitations were sent by the Women's National Health Association to all the Dublin doctors. As it was advertised in the public press along with the other lecture, and was given in the theatre of the Royal Dublin Society, with the Countess of Aberdeen in the chair, it was naturally supposed that it was to be a public lecture, and the medical profession took exception to a lecture entitled "The Conservative Treatment of Surgical Tuberculosis of the Bones and Joints" being delivered by a doctor to a general audience. In spite of a prominent notice in the paper on the morning of the lecture, saying that only medical men had been invited to attend, there was a very small audience, only about forty doctors being present. The lecture was extremely interesting, as showing what could be done for surgical tuberculosis by conservative methods, when neither time nor money were spared. Dr. Gauvain explained his methods, and illustrated them by lantern slides and cinematograph films. There was a short discussion after the lecture. It is a pity that the lecture was not delivered at the Royal College of Surgeons, which would have assured a good attendance, and it is to be hoped that Dr. Gauvain will understand that no discourtesy to himself was intended by the absence of the majority of the profession. In the evening Sir William Treloar explained how he founded the home, and explained the working of it, illustrating his lecture with lantern views showing the patients at work and play. This lecture was well attended, and Lady Aberdeen, who presided, expressed the hope that a similar home would be started in Ireland. Already there is an institution for Belfast carrying on similar work, with homes in Belfast and Bangor.

THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

On February 1st, being Charter Day, the Royal College of Surgeons held its annual dinner. The President of the College, Dr. R. Dancer Purefoy, occupied the chair, and the guests included His Excellency the Lord Lieutenant and the two new Fellows on whom the Honorary Fellowship had just been conferred in the board room of the college—Surgeon-General Sir Launcelot Gubbins, K.C.B., M.V.O., K.H.S., M.D.Dub. (*hon. causa*), and Sir Berkeley George Andrew Moynihan, F.R.C.S.

Sir Launcelot Gubbins, speaking after dinner, referred to the sections of the Officers' Training Corps raised both by the College of Surgeons and Trinity College, and said that he had been much struck with their physique and personal appearance. He also spoke of the great improvement that had taken place in the general health of the army in the last ten years. Whereas in 1901 there were 170,000 cases of disease and 1,700 deaths, in 1911 (although the strength of the army was greater by 30 per cent.) the numbers were 90,000 and 800. He mentioned especially the striking decrease in the numbers of remissions and deaths on account of enteric fever and in the numbers of men invalided from India. An important cause of this improvement was the better training of officers and the increased attention paid to hygiene. During the course of the evening an enjoyable selection of musical items was rendered by the Leinster Male Voice Quartet—Messrs. J. Barklay Walker, W. C. Lewin, J. Gerard, and Dr. Wm. S. Haughton.

A DOCTOR'S FEE.

At Portadown last week, in a case under the Workmen's Compensation Act, it was stated that the doctor who attended the plaintiff would not give evidence unless a fee was put in his hand, and that the man was unable to pay it. The judge said it was a pity the doctor had not given evidence, for he could have given him a guinea for his attendance; he went on to say that they often heard about the benevolence of the medical profession, but it would seem that a good deal of it was only on the surface. It is a pity that a man in the position of a judge should have made such a remark. We know nothing about the facts of the particular case, but we do know that in cases under the Workmen's Compensation Act the fee of one guinea is often ridiculously inadequate for the doctor's time and trouble in attending court, and unless the doctor looks after his own interests very carefully he may not get even that. We are glad to note that a solicitor remarked that medical men did much for charity, and that in some cases they were imposed upon.

INSANITARY CONDITIONS IN DUBLIN.

At the annual meeting of the Dublin Chamber of Commerce the Chairman drew attention to the insanitary conditions under which the poor of Dublin lived. He said that the commercial community, he was sure, were willing to bear its share in the cost of remedying this state of things, which was a stigma on the city, provided the remedy was carried out in a businesslike way, with forethought and without extravagance. The tenement occupiers, he said, had the remedy in their own hands, as they possessed a majority of votes in many of the city wards. Besides being the first and greatest sufferers from the epidemics engendered by bad sanitation, the tenement occupiers were the largest ratepayers in the city in proportion to their incomes, though this was concealed from them by the system of compounding for rates.

CARRICK-ON-SUIR MEDICAL OFFICERS' SALARIES.

The Carrick-on-Suir Guardians, at their last meeting, had a motion before them to increase the salaries of the five dispensary doctors of the district. The doctors had a solicitor present to put forward their claims, and Dr. McCormack, Local Government Board Medical Inspector, was also present to advise the guardians. Some of the guardians present asserted that Dr. McCormack had a brief for the doctors and that the guardians would refuse to be dictated to by the Local Government Board. The guardians therefore refused a hearing to both Dr. McCormack and the solicitor of the dispensary medical officers, and the motion for the increase of salaries was defeated by 23 to 19 votes.

PREVENTION OF DISEASE.

The Oughterard District Council, at its meeting on January 23rd, unanimously adopted a resolution expressing deep concern at the frequent recurrence of fever in the union owing to the defective sanitary conditions under which the people live, conditions they are unable to remedy with the resources at their disposal owing to the poverty of the union and the high rates prevailing. Drastic remedies are required, involving an outlay entirely

beyond the powers or resources of the council. In the district are hundreds of insured persons and hundreds of persons suffering from tuberculous disease. But no lasting benefit can be expected from the National Insurance Act or from the Tuberculosis Act, because when patients are sent to hospitals or sanatoriums and cured they have to return to the same insanitary surroundings, with the result that they develop the same disease again. No remedy can be permanent until the housing question is seriously taken in hand. The resolution concluded as follows:

> In our opinion the proper authorities to take remedial measures in unions like ours, where congestion, poverty, insanitary conditions, and their usual accompaniments of typhus, typhoid, and tuberculosis exist, are the Congested Districts Board, the Local Government Board, and the Irish National Health Insurance Commissioners. We urgently call on these bodies to form a committee of inquiry to investigate the conditions which prevail in this union, with a view to having proper remedial measures taken to put an end once and for all to these deplorable conditions, which are a disgrace to any civilized Government. We pledge ourselves that this council and each individual member thereof will assist by every means in our power any such committee of inquiry, and we are confident that when the members of the above-mentioned bodies become fully aware of the true conditions which prevail they will see the urgency of having the necessary remedial measures adopted with the least possible delay.

Presentation to Dr. Blakeney.

On Saturday, January 25th, a number of Roscommon gentlemen waited on Dr. and Mrs. Blakeney at the Infirmary House, Roscommon, and presented them with an illuminated album and a purse of sovereigns. The presentation was on the occasion of the doctor's marriage.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Recent Extension of the Edinburgh Royal Maternity Hospital.

During the past months a considerable extension has been made to the Edinburgh Royal Maternity and Simpson Memorial Hospital, and a number of improvements have also been effected in the internal arrangements and lighting of the institution. One of the existing defects of the hospital was lack of proper accommodation for the nurses in training as well as for the sisters and staff nurses engaged in the work. Formerly, when only ten or twelve pupils could be trained at one time the accommodation was not much below the necessary amount, although the nurses' quarters were badly lighted and far from cheerful. When, however, the hospital began to train as many as twenty or even twenty-three or twenty-four pupil nurses at once, all the defects and inconveniences became more obvious, and every difficulty was increased. Welcome relief came when the directors purchased the neighbouring building, which had been used as a residence for medical students, and was called the Milne Murray Lodge. Very few alterations were needed to convert the lodge into an ideal residence for the nursing staff; it was already united to the hospital by a bridge; the bedrooms were large, airy, and well lighted, and there were also sitting and reading rooms. There were in all sixteen bedrooms, three of which were double, so that nineteen nurses were accommodated in the extension, a few others remaining in the hospital itself. The supply of hot water was improved as well as the heating of the building.

Through the transference of so many of the nurse pupils to the new block, space was given in the hospital itself for sundry much needed improvements. A more spacious board room was made available for the meetings of the managers and medical board, a ward for sick nurses was provided, and a large dining hall in which all the nurses could take their meals together was found. Small wards for special purposes were added to those already existing for the pregnancy cases (Hamilton or prematernity ward), and for patients in the first stage of labour.

Further improvements were made possible by reason of the helpful action of a number of ladies in Edinburgh and the neighbourhood, who arranged for a performance of *Penelope* at the King's Theatre. The proceeds of the performance (a *matinée*) were given to the hospital, and were used for the construction of a new operating theatre with the most recent equipment and appliances for the installation of the electric light throughout the building, and for the furnishing of the nurses' sick room, etc. Minor alterations were also carried through, with the result that the institution is now much more worthy of the name "Simpson Memorial" which it bears, and much better adapted for the important work which is carried on in it.

Memorial to the late Dr. G. A. Gibson.

The late Dr. George A. Gibson's friends (and he had many) all over the world will be glad to hear that a movement is on foot to found a suitable memorial to him. Last week Dr. Graham Brown, President of the Royal College of Physicians of Edinburgh, presided over a meeting, summoned by a notice in the newspapers, in the hall of the college. Lieutenant-Colonel Sir Joseph Fayrer, Bart., Sir William Osler, Bart., Sir Clifford Allbutt, K.C.B., Sir Alexander Simpson, Sir Halliday Croom, Sir William McCormick, Sir James Affleck and others sent apologies for absence; and Sir Thomas Clouston, Sir Robert Philip, Dr. Byrom Bramwell, Professor Alexis Thomson, Professor Noël Paton (from Glasgow), Mr. Victor Noël Paton, W.S., Mr. George Berry, and many others were present. The meeting lasted a short time, and cordially expressed approval of the proposal to found a memorial. The motion to this effect was proposed by Dr. Byrom Bramwell and seconded by Mr. Hodsdon. A committee was then appointed to carry the proposal into effect.

Special Correspondence.

PARIS.

Salvarsan and New Arseno-Mercurial Drugs.—Febrile Reaction after Injection of Salvarsan.—Pregnant Syphilitics Treated by Salvarsan.—Transposition of Viscera.

On January 17th, at the meeting of the Medical Society of the Hospitals, the results of treatment of syphilis with the new arsenical compounds of mercury were discussed. Drs. Beurmann and Tanon related the successes which they had obtained with the drugs numbered 1116 and 1151. The authors claim that these two new drugs give more satisfactory results than salvarsan (606). The new drugs, they said, influenced the chancre as well as the secondary and tertiary lesions, and at the same time had no unfavourable effect upon the circulatory and nervous systems. The dose of the new drugs varied between 40 cg. to 5 cg. dissolved in distilled water containing 12 grams of sodium carbonate per litre. In practice, a small ampoule containing the 1116 or 1151 is inserted into a larger ampoule containing the soda solution. The whole is sterilized and can be kept for a considerable period without undergoing alteration. When required for injection the small ampoule is broken by shaking, and the solution in the large ampoule is then ready for immediate injection.

At the same meeting Dr. Jeanselme read a report by Dr. Jacquet and himself on the febrile attacks which may follow salvarsan injection. They have come to the following conclusions: (1) That the fever following the first injection is not a toxic fever; (2) that the febrile reaction occurs only in patients who show active virulent syphilitic skin lesions or lesions on the mucous membrane; (3) that injection of salvarsan cuts short a syphilitic febrile reaction, but has no effect on the febrile disturbances from other causes (typhoid, phthisis); (4) that a febrile reaction takes place only when a large initial dose is given and only after the first dose, and that it is due to the wholesale destruction of the spirochaetes, which does not take place when small doses, often repeated, are given, or where mercury treatment is carried out. In syphilitic cases which have previously undergone a course of

mercury, no febrile reaction follows the injection of salvarsan.

Dr. Jeanselme made another communication, on the treatment of syphilitic pregnant women with salvarsan as a prophylactic measure for the child as well as for the mother. During the past two years he has carried out this line of treatment with very encouraging results; the cases in which the patient had previously always miscarried are probably the most interesting. Fourteen women who showed marked active syphilis, and who were treated by weekly doses varying from 30 to 40 c.cm., gave birth to children who showed no signs of congenital syphilis, and were well up to weight and apparently healthy. Two women who had had repeated abortions carried the child to full term, and gave birth to apparently healthy children. Dr. Jeanselme contrasts these cases with the results obtained in similar cases treated with mercury.

The transposition of the viscera, though perhaps not extremely rare, has probably never been demonstrated in the same way as in a woman in Paris at present, whose case was reported to the Medical Society of the Hospitals by Drs. Podovin and Dufour. Dullness was found in the left hypochondrium, and the heart sounds were best heard to the right of the sternum. By *x*-ray examination the heart and liver were found transposed; the patient was given a bismuth meal, and another *x*-ray photograph taken, which showed that the stomach lay on the right side, and the pylorus towards the left; the caecum was in the left iliac fossa, and was well seen after the bismuth had passed through to the large bowel. The cerebral functions are normal, and the patient is not left-handed.

Correspondence.

THE CONSTITUTION OF THE ASSOCIATION.

SIR,—There seems to be a consensus of opinion that the Insurance Act must be amended at an early date if it is to be worked as a practical scheme by the profession. There seems also to be an equally strong consensus of opinion that the Representative Meeting has clearly demonstrated that it may completely fail to represent the majority of the profession.

Many of those who are best acquainted with the constitution of the Association have long thought that this might happen, for a constitution under which a large proportion of the busiest general practitioners throughout the country were bound to travel distances of from six to forty miles in order to have a voice in

(*a*) Electing their Representative,
(*b*) Instructing this Representative as to how he was to vote,
(*c*) To give his vote on any question referred to him for a referendum,

was bound to result in causing a very large number of these general practitioners to have no voice in the policy of the Association.

That this is so is clearly seen by the voting at the meetings called in the Divisions last December. In these divisional meetings 2,000 voted in favour of working the Act, 11,000 voted against doing so, but the opinion of some 14,000 or 15,000 members was never ascertained at all. Yet, in spite of not knowing the opinion of this large proportion of members, the policy of the Association was declared at the ensuing Representative Meeting. How little binding was this "declared policy of the Association" was shown by the way in which it was repudiated by the members of the Association within a week or two of its declaration.

Now, the British Medical Association is the only body which can speak with a wide amount of true authority for the bulk of the practitioners throughout the country, and it has already done a great deal of good work for the profession generally. There is no doubt that the present terms under which the Insurance Act is being worked are far better than the terms originally proposed; and for this improvement the profession has to thank the British Medical Association. I have nothing but admiration for the work which has been done by leaders in the Association like Mr. Verrall and Dr. Macdonald, and the whole profession owes them a great debt of gratitude for the work they have done.

But the Association can never be really successful in formulating a policy for the profession until every general practitioner, however busy, has an opportunity of recording his opinion as to what the policy of the Association should be before it becomes its declared policy.

There seems to be a considerable body of members who think that everything will be solved by allowing the Council of the Association to obtain a postal referendum. There is no question that by granting this power to the Council a very great reform would be effected, for the present mode of taking a referendum is no referendum at all. The process now called a referendum in the existing regulations is nothing more than an appeal by the Council from the decisions of meetings of Divisions, as expressed by Representatives instructed at these meetings, back again to the meetings of the Divisions. A true referendum as defined in the Concise Oxford Dictionary is:

> Referring of certain political questions or of such questions under certain circumstances to the electorate for direct decision by a general vote on the single question.

The present process does not refer the question "for direct decision by a general vote," and to apply the term "referendum" to the present process is a misnomer, a pretence, a sham.

But the crux of the whole question cannot be settled by a postal referendum alone. The question is, How can the busy general practitioner, living from six to forty miles from his Divisional centre, have a voice in the policy of the Association before it becomes the declared policy? for if he is deprived of his opportunity of giving his voice as to this declared policy he will never feel bound to carry it out.

I would suggest that the following changes in the constitution of the British Medical Association could easily be carried out, and would effect the necessary reform:

1. That every Division should choose its Representative by a postal vote.
2. That a Representative should speak and vote at a Representative Meeting in accordance with the wishes of his constituents, but that a plan should be devised to replace the present haphazard system under which a Representative may receive "instructions" from a meeting attended by perhaps less than 10 per cent. of the members of the Division. I suggest that it should not be competent for a Division meeting to "instruct" the Representative of the Division unless at least two-thirds of the members of the Division are present at the meeting. A decision of the Association is a very serious act, and the Council in preparing the agenda which it issues for the information of members should state in plain and unmistakable language the matters on which formal decisions fixing the policy of the Association are to be invited. If a sufficient number of members of a Division cannot attend the meeting of the Division, then the Representative of the Division who has been elected by the postal vote, which gives every member a choice in his selection, should be free to speak and vote in accordance with his judgement after hearing the arguments in the Representative Meeting.
3. That the Council have the power of taking a postal referendum on the principle embodied in the Swiss Constitution on all matters which they cannot settle by a two-thirds majority.

I venture to submit these suggestions to the consideration of the members of the Association, not in any spirit of hostile criticism, but because I am sure that no "declared policy of the Association" can succeed until it is supported by the actual vote of the majority of the members. It has been this want of support by the majority which has paralysed the work of the Association in the immediate past, *and it will paralyse it again in every crisis and negotiation which may arise.* It is of no use to obtain the opinion of 14,000 members if the opinion of another 14,000 members is not known.—I am, etc.,

Exeter, Feb. 1st. HENRY DAVY.

MEDICAL MEN IN PUBLIC LIFE.

SIR,—Insurance Committees will within the next two months be fully formed; the bodies who will have much say in their final constitution are the county councils. The coming March will bring elections of county councils upon us. I have watched in vain for a sign that this situation is appreciated. The present position of our profession is, I venture with all humility to suggest, in some considerable part due to the fact that we do not take our due position or accept our responsibilities in the body politic, neither by our own presence at its councils nor by influencing the election of candidates whose feelings may harmonize with ours. County councils, town councils, rural councils, all bodies in whom the local government of the country is vested—in these the doctor is conspicuous by his absence. If medical men will not come out into the arena of public life and take up some of the duties themselves (surely many might secure election), at least they may exert much influence to secure the success of candidates who have the will, as they will have the power, to mitigate in some small measure the situation created for the profession by this unspeakable Act. I venture once more, Sir, to suggest that we shall not better our position by indifference in the coming contests. Lack of time we should not plead, so clear is the call of duty. Opportunity is here. "The heart that seizes quick hold of opportunity can achieve." No new truth this, nor dimmed because of past neglect.—I am, etc.,

ROBERT CUFF,
Chairman, North Riding (Yorks) Medical Committee.

Scarborough, Feb. 4th.

MEDICAL SERVICE IN THE HIGHLANDS AND ISLANDS OF SCOTLAND.

SIR,—It is quite clear from the report of the Committee on the Highlands and Islands Medical Service that the conditions of life prevailing in many districts is quite out of keeping with modern requirements. The Insurance Act has been of inestimable benefit to the Highlands and Islands in drawing public attention to the prevailing conditions.

I had the opportunity of bringing the matter before the Chancellor of the Exchequer, and was cordially supported by my friend and colleague, Mr. Macpherson, M.P. for Ross and Cromarty, and the Chancellor, in reply, promised that the cases we brought forward would receive sympathetic consideration and attention. In pursuance of that promise he appointed the Committee which has now issued its report, and we understand that a special grant will be made to make adequate provision for both doctors and nurses; but in the meantime we are extremely anxious, as it is, of course, absolutely impossible for doctors to attend insured persons in anything like the terms of the Act.

Doctors have other grievances, which are dealt with very ably by the report.

Security of Tenure.

The first is with reference to security of tenure. Doctors for many years have protested vainly against the injustice of being summarily dismissed by a parish council without any appeal. Twelve years ago I presented a memorial to Lord Balfour, signed by practically all the Scottish unofficial members of both parties, praying for this very reasonable request, and although we know of no objection, Scottish Secretaries have persistently refused the demand. The report will, I trust, give doctors hopes of a reasonable amount of fair play.

Doctors' Dwelling-houses.

A very serious difficulty is again with reference to doctors' houses. The paragraph of the report is worth quoting in full:

THE DOCTOR'S DWELLING-HOUSE.

39. The provision of a dwelling-house for the doctor that would be satisfactory both as regards accommodation and situation is of extreme importance.

Complaints were frequent that the house provided is ordinarily too small, is in many cases neither wind nor water tight, is insanitary, and lacking in even the most elementary conveniences of civilized life.

40. Moreover, instead of being centrally situated and so affording ready access to all parts of the practice, the doctor's residence is occasionally found in the remote corner of a large parish and distant some 15 to 20 miles from half his patients. The main reason given for this anomaly, which seriously affects both the cost and readiness of medical attendance, is that the parish council, however willing in the matter, have not the requisite statutory powers to build or buy a suitable doctor's house.

41. On this question, Mr. Maxwell, Secretary of the Local Government Board, writes:

> "In some parishes it is difficult for the medical officer to find a suitable house. It has, unfortunately, been held that parish councils have no power to provide a house for the medical officer out of the poor rates. But for this restriction, it is probable that most parishes would ere now have provided a house for the medical officer. I consider the provision of a suitable house is second in importance only to the provision of an adequate salary."

There was evidence that the local proprietor or agent is occasionally responsible for this difficulty. Mr. Tulloch (Eday) says:

> It is the trouble with the house that is the great difficulty. . . . There were proposals made to build one. The first thing was to go to the proprietor's agent for a site. At first they were favourable, and then they refused and would not give a site.

And Dr. Moir (Inverness):

> I know of a case where a doctor had the use of a house, and the relations between the doctor and the factor became strained and he was asked to move.

"In marked contrast," the report says, "are a school board's powers in regard to sites and buildings."

To give effect to this legislation is imperatively demanded, and it is proposed to introduce a bill dealing with the matter, which it is hoped will receive unanimous support.

The case mentioned of Eday is bad enough, but Papa Westray is even worse, for there we have raised sufficient money to build a house, but up to now have been unable on any terms to obtain a site for the house, as the person representing the landlord or mortgagees has persistently refused to either grant, sell or lease any ground. The Islanders with extreme difficulty have, in one way or other, contrived to secure the services of a doctor, but it is only by the kindly action of the Scottish Local Government Board that they have been able to do this, as the same person who, unfortunately, is in charge of the Island, used every effort to deprive the Island of the services of the doctor.—I am, etc.,

J. CATHCART WASON,
M.P., Orkney and Shetland.

House of Commons, Jan. 30th.

P.S.—Since writing the above I am very thankful to learn that an interim grant of £10,000 has been made for the Highlands and Islands.

FEES TO PRIVATE PATIENTS.

SIR,—The conditions of practice are being so greatly altered by the operation of the Insurance Act, at least in most localities, that, it appears to me, a corresponding change should now be made by the whole profession in the scale of fees for private patients.

The *raison d'être* for the old sliding scale no longer applies with the same force. Medical men are no longer expected by the public to act from charitable motives. The basis of the Act is the repudiation of charity, and is a demand for a business arrangement.

Let the profession respond in the same spirit. I appeal, therefore, to the Association to confer a much-needed and long overdue boon on the profession by the compilation of a scale of fees, as well as a capitation rate, of a more generous nature than that which has heretofore existed.

The justice of the move will be admitted by the public, and the present unanimity and temper of the profession can be relied on to enforce it. The time is ripe, *carpe diem*. Next year it may be too late.—I am, etc.,

W. CODDE ADAMS.

London, N.W., Feb. 3rd.

THE SIGHT TESTS OF THE BOARD OF TRADE.

SIR,—I have examined the sight tests of the Board of Trade and find them most unsatisfactory, and not in agreement with modern science.

Form Vision.

In the form vision test the letters are printed on canvas, to which a piece of wood is attached. In the normal position this rolls up at the bottom, and has to be held

down by a tag by the examiner. I have never before seen anything so primitive. For curiosity I ascertained whether these tests were obtainable at the ordinary opticians. I tried two or three of the leading ones in London, and found they were not on sale or on their lists. The objections to this kind of test are as follows: The surface is liable to crack, and the letters become distorted. It is very difficult to obtain a flat surface by the method used, in fact when I was being examined the surface was to a certain extent concave, and therefore an astigmatic effect was produced. I found I could read the letters better by tilting my glasses, so that the images formed of the test types on my retinas were astigmatic. The effect of this is that men having a defect of the eyes might read the test types better than a man without this defect. The arrangement of lighting was lateral and very defective, and as the daylight varies considerably men would not be examined in similar conditions.

The method to be adopted should be that which is employed by nearly every ophthalmic surgeon. The letters should be printed on a smooth white surface, preferably white porcelain. The letters should be the standard size—that is, the letter should subtend an angle of 5 minutes on the observer's retina, and each part of the letter should subtend an angle of 1 minute. I do not know whether the size of the letters I saw was correct; the letters, however, could be easily measured with the aid of a sextant. The illumination should be constant and uniform and free from all points of glare. It should be by diffused daylight when possible, the source of the light to be opposite the type and not placed laterally, as is the case with the Board of Trade. The lighting should be such that a normal sighted person should be able to read all the letters at the required distances with the greatest ease.

It is obvious that any standard must be arbitrary, and efficiency is only compatible with a high standard. Whether the standard given is too high can only be decided by a series of experiments. This would take a considerable time.

Colour Vision.

The Wool Test.—This has not been improved. The method of dividing the wools into sets is a very bad one, and the non-use of colour names makes the test very defective and unreliable. There are numerous colours which ought to be present and are absent. The test as used is very confusing to a normal sighted person. I think the test will be even less efficient than it has been previously. Normal sighted persons will be rejected and colour-blind ones passed as before.

The Lantern Test.—This lantern is an imperfect copy of my lantern and lacks many of its essential features. It is a paraffin lantern which shows one or two small lights simultaneously which are reflected from a mirror. Its chief defect is that it lacks any means of regulating the luminosity of the light; only two colours and white are used in the lantern, so that a man knows beforehand that he will only be shown these three lights. The method of having two lights is not a good one, and is one that I have carefully investigated. Change of colour due to simultaneous contrast is likely to cause the rejection of many normal sighted persons, and those with slight and unimportant defects of colour perception. On the other hand, in my opinion many colour-blind persons who have practised themselves in distinguishing between the three lights employed, particularly if with one of these lanterns or one of similar construction, whilst in reality very dangerous persons and liable to cause accidents at sea, will be passed.

The Classification of Colour Blindness Recommended by the Committee.—This method is absolutely erroneous. I have examined two colour-blind persons on this method, and found that they appeared normal sighted. I have also examined a normal sighted person who appeared very colour blind on this method. The method is strictly analogous to endeavouring to ascertain whether a man had a good musical ear by measuring the distances at which he could hear different notes. The two things are quite distinct.

It is curious that whilst one Government department (the Admiralty) uses such very efficient methods, another should use methods which are so imperfect and unscientific. A thorough inquiry into the methods of the Board of Trade by unbiassed persons is needed in the interests of the mercantile marine and the nation.—I am, etc.,

London, Jan. 29th. F. W. EDRIDGE-GREEN.

THE SUPPORTS OF THE UTERUS.

SIR,—On p. 225 of the BRITISH MEDICAL JOURNAL for February 1st there is a review of Liepmann's Atlas of Gynaecological Anatomy. In the course of his remarks the reviewer writes: "When we turn to prolapses all is still obscure." And again, "We cannot understand how the uterus loses or frees itself from its supports until we thoroughly recognize what these supports may be, and as yet the problem is not thoroughly understood."

Surely his position is unduly agnostic, for many gynaecologists have ceased to regard prolapses as "obscure," and various anatomists now demonstrate the "supports" which have so long been wrapped in mystery. During recent years the whole subject has been cleared up in the *Journal of Anatomy and Physiology*, in the *Transactions* of the Royal Society of Medicine, in the *Journal of Obstetrics and Gynaecology of the British Empire*, and in various books. There are still some who ignore the available information, and fail to realize that this problem has been settled; therefore contributions to its discussion are still required. One of these, curiously enough, is mentioned on the same page with the review in question. Thus—Dr. M. Moritz read a paper on the fracture of the so-called ligaments of Mackenrodt. By means of dissections and drawings he conclusively showed these so-called ligaments to be perivascular tissue surrounding the vessels supplying the uterus and not separate ligaments.—I am, etc.,

Manchester, Feb. 4th. W. E. FOTHERGILL.

MEDIAEVAL MEDICINE.

SIR,—Of course I appreciate very much that lengthy discussion of my Old Time Makers of Medicine in the issue of the JOURNAL for December 28th, 1912. May I be permitted to make just one comment?

When I began ten years ago to study mediaeval medicine and surgery I was amazed to find how many anticipations of what I had been used to think of as modern were to be found in the old textbooks. That amazement has grown with the years and each year presents new reasons for its continuance. Instead of exaggerating it always seems to me that my ignorance has up to the present time made me make too little of these old masters. I am learning every day to appreciate them more.

Take the single department of intestinal surgery. The operations for the radical cure of hernia were many. They were performed in the Trendelenburg position with the patient on a board slanting against the wall of the operating room. The *Iconographie de la Salpêtrière* published a picture of this mode of operating taken from an old-time book. In wounds of the large intestine, especially when transverse, it was suggested by the Four Masters that the trachea of an animal should be put into the intestinal lumen and the intestine brought together over it. The wound was then brought near the abdominal wound in order to provide for drainage if necessary, which these old surgeons understood very well. The commentator on the Four Masters expressed the positive opinion that in time the trachea will be absorbed or discharged. Dr. Lutz, in the *Interstate Medical Journal* for November, calls attention to the work of Dr. Pfolsprundt in the fifteenth century. He suggested in intestinal transverse wounds the insertion of a silver tube with blunt ends larger than the middle over which the cut ends of the bowel were to be fastened. What was to happen to this forerunner of the Murphy button Pfolsprundt does not say. But he assures us that a patient so treated might survive from forty to fifty years. His technique for plastic surgery, as for the making of a new nose, is perfect in every detail. In every other matter of surgery that he touches there is the same practical character.

Of course there are the textbooks, but most of us sincerely hope that we will be judged by the textbooks and only the best among them. But fortunately Time's winnowing can usually be depended upon.

Compare for a moment the declaration of Theodoric in 1266 that pus is unnecessary and due to mistakes in

treatment, and Nussbaum's expression just six centuries later, about 1869, when before Listerism came to him he declared that he would close his hospital because he could not avoid purulent processes. Can we say too much of the man who had solved that problem six centuries before? More knowledge is all that is needed for enthusiastic admiration and not merely complacent recognition of the work of the Middle Ages.—I am, etc.,

New York, Jan. 14th. JAS. J. WALSH.

The Services.

C AND M.

It may be of interest to some readers to learn that the two distinguishing letters C and M have recently been introduced into the official *Monthy Army List*. These letters signify "Crimea" and "Mutiny," and are prefixed in Gothic lettering to those officers on the active and retired lists who served in either or both of these campaigns.

Altogether there are 2 officers on the active list and 186 on the retired list distinguished by the letter C, and 3 on the active and 402 on the retired lists by the letter M. Fifty officers have both.

Medical officers to the number of 36 (including one quartermaster) are on the list, there being 8 with C, 20 with M, and 8 with C M.

A full list of these retired officers follows:

C M.

Boustead, Surgeon-Major R., M.D., [F]. Also served in China (60), Abyssinia (67), and Soudan (85).
Home, Surgeon-General Sir A. D., V.C., K.C.B., [R]. Also served in China (60), New Zealand (63-65), and Ashanti (73-74).
Innes, Honorary Deputy Surgeon-General C. A., M.D.
Jackson, Honorary Deputy Surgeon-General Sir R. W., Knt., C.B., [R], [F]. Also served in Ashanti (73-74), Zulu (79), and Egypt (82).
Longhurst, Surgeon-Major A. E. T., M.D.
Reade, Surgeon-Major-General Sir J. B. C., K.C.B., K.H.S., [R]. Also served in Afghanistan (78-80).
Rendell, Surgeon-Major W. J. Also served in Bhootan (65).
Sinclair, Deputy Surgeon-General E. M., C.B., M.D., [R]. Also served in South Africa (81).

C.

Cattell, Deputy Surgeon-General W. Also served in Afghanistan.
Fletcher, Surgeon-Major W.
Gorman, Honorary Major L., Quartermaster (retired), Army Medical Staff. [R]. Also served in Canada (66-70), Zulu (79), and Egypt (82).
Gulland, Honorary Surgeon-General A. D., M.D., [R]. Also served in China (60), and Hazara (6[illegible]).
Lawrence, Honorary Brigade-Surgeon H. J. H. Also served in Soudan (85).
Read, Honorary Brigade-Surgeon C. C. Also served in Soudan (85).
Rose, Honorary Deputy Surgeon-General H. J. Also served in China (60), and Afghanistan (78-80).
Saunders, Honorary Deputy Inspector-General G., C.B., M.D.

M.

Bidie, Surgeon-General G., C.I.E., M B., K.H.S., [R].
Bradshaw, Surgeon-Major-General Sir A. F., K.C.B., K.H.P. Also served in Afghanistan (79), Zhob (84), and Hazara (91).
Collins, Honorary Brigade Surgeon F., M.D.
Colvin-Smith, Surgeon-General Sir C., K.C.B., M.D., K.H.S., [R], [F]. Also served in Burma (52), and Egypt (82).
Don, Honorary Deputy Surgeon-General W. G., M.D. Also served in Baltic (55).
Fairweather, Deputy Surgeon-General J., M.D. Also served in North-West Frontier (57).
Giraud, Surgeon-Major-General C. H., [R]. Also served in China (60-64), and Zulu (79).
Hopkins, Honorary Brigade-Surgeon E. Also served in North-West Frontier (63), Afghanistan (78-80), and Soudan (84).
Hoysted, Honorary Brigade-Surgeon I. Also served in Burma (85-87).
Joynt, Deputy Surgeon-General C., M.D. Also served in Persia (57), and Abyssinia (57-68).
Landale, Deputy Surgeon-General J.
Loch, Deputy Surgeon-General J. H., M.D.
Mackinnon, Honorary Brigade-Surgeon C.
Planck, Surgeon-General C.
Sexton, Brigade-Surgeon E., M.D. Also served in China (60), and Abyssinia (67-68).
Smith-Wynne, Deputy Surgeon-General W. A.
Thornton, Deputy Surgeon-General Sir J. H., K.C.B., M.B. Also served in China (60), Cosayah (62-3), Bhootan (65-6), Egypt (82-85), and Hazara (88).
Veale, Brigade-Surgeon T. S., M.D. Also served in Bhootan (65-6), and Afghanistan (79-80).
Watson, Deputy Surgeon-General G. A. Also served in Afghanistan (79).
Wyndowe, Deputy Surgeon-General S. J., M.D.

[F] signifies the bestowal of a foreign decoration.
[R] signifies the possession of a reward for distinguished service.
K.H.S. and K.H.P. denote the Honorary Surgeons and Physicians to the King.

Medico-Legal.

WORKMEN'S COMPENSATION ACT.

Two Deaths from Pneumonia.

A CASE decided in the Court of Session, Edinburgh, on January 25th, raises an important point under the Workmen's Compensation Act.

Judgement was given by a bench of seven judges in a stated case under the Workmen's Compensation Act between the Alloa Coal Company, Ltd., and Mrs. Margaret Walls or Drylie and others. The question in the case was whether John Drylie, a brushing contractor, who was employed at the Brucefield Pit of the Alloa Coal Company, and who contracted a chill, which was followed by pneumonia, had met with an accident, arising out of and in the course of his employment. On September 25th, 1911, while Drylie was at work, water began to accumulate at the pit bottom, owing to a defect in the pump. The pump was stopped in order that the defect might be remedied. Drylie and his two companions became alarmed when they found the water rising, and they decided to leave the pit. When they arrived at the pit bottom they were heated, and had to stand there up to the knees in icy cold water, and with a draught of cold air falling down the shaft on them for about twenty minutes until the cage descended. On arriving at the pithead Drylie remained for about twenty minutes or half an hour, and on reaching his house complained of chill. He was at his work off and on until September 29th. Two days later he was told that he was suffering from pneumonia, and he died on October 8th. The Brucefield Pit was a wet pit, but it was unusual for water to accumulate to the depth of 2 ft.

Sheriff-Substitute Dean Leslie found that the pneumonia from which Drylie died was due to the chill which he got on September 25th; that his remaining at the pithead in his wet condition and his working on the days following, and his wetting on these days, had not a favourable effect upon the illness; and that the pneumonia was a natural sequence of the chill. He held that Drylie's death resulted from injury by accident arising out of and in the course of his employment, and found that the widow and her three children were entitled to compensation amounting to £265 3s. 8d.

The Court, Lord Salvesen dissenting, held that the appellants had failed to show a case for disturbing the decision of the arbiter, and dismissed the appeal with expenses.

Lord Dundas, who gave the leading opinion, said this case seemed to be near the line which separated liability from non-liability for compensation by an employer. The Sheriff-Substitute had decided that it lay on the side inferring liability, and his lordship did not see any reason for disturbing his decision. His lordship thought one might postulate, as the result of all decisions, that they must have a definite accident of some sort, not necessarily an occurrence extraneous to the workman, involving something unusual, unexpected, and undesigned to which the injury or death could be unequivocally, or at least by a reasonably inforred use of causation in fact, attributed; and also, probably as a corollary, that death from disease, apart from the industrial diseases specially mentioned, was not an accident unless the disease which caused death could be definitely collocated in the relation of effect and cause with some unusual, unexpected, and undesigned event arising at an ascertained time out of the employment. He thought the elements of an accident were present in this case.

The other judges, excepting Lord Salvesen, concurred.

Lord Salvesen, who dissented, said this case was one of the most important that their lordships had had to determine under the Workmen's Compensation Act, as it was the first in which an arbiter had decided that a death which resulted from pneumonia following on a neglected cold was a death resulting from injury by accident. If their lordships decided the case in accordance with the views of the Sheriff-Substitute it opened up an endless vista of legislation under the Workmen's Compensation Act, and covered cases which could hardly have been considered by the framers as falling within the Act. His lordship was unable to reach the conclusion that the deceased met with an accident which caused him an injury by accident within the meaning of the statute.

A few days after the case reported above was decided in the Court of Session another appeal was heard, in which the condition of water in the pit was held to be "normal."

The appeal was in respect of the claim of John Brown, miner, Rutherglen. He was at work in No. 2 pit, Gilbertfield Colliery, on June 26th, 1911, where, in consequence of a wreck in the shaft, all the men in the pit were ordered to ascend to the surface. They proceeded towards the shaft of No. 2 pit, by which they were usually raised to the surface. They were met by an official, who told them to proceed by the communication

road to the shaft of No. 1 pit. Here they had to wait at a midlanding for about an hour and a half, and a very strong current of air blew in on Brown and his fellow miners. After reaching the surface Brown complained of feeling cold, and ran part of the road home to try to recover warmth. The next morning Brown went down the pit, but he was unable to start work on account of illness, due to the chill incurred on the previous day. Pneumonia supervened, and he died on July 3rd, 1911. The Sheriff-Substitute found that Brown died from the effect of injuries by accident received by him on June 26th, and awarded compensation to the respondent.

The Divisional Court reversed this decision, deciding that Brown's death was not due to an accident arising out of or in the course of his employment. There was nothing abnormal, it was held, in the circumstances in which the deceased and the other men found themselves at the shaft No. 1, as it was the down-cast shaft, and the current of air was always blowing there. The case was entirely distinguished from the Drylie case, inasmuch as in that instance there was the abnormal condition in the presence of water, which had not been there before and in which the men had to stand. In the present case the conditions were entirely normal.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following degrees have been conferred:

M.D.—B. P. Campbell.
M B.—J. W. Adams, W. B. G. Angus, A. C. Johnson.
B.C.—J. W. Adams, W. J. Carr.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A COMITIA was held on Thursday, January 30th, Sir Thomas Barlow, Bart., K.C.V.O., President, being in the chair.

Admission of Members.

The following gentlemen having passed the required examination were admitted Members of the College:

Anthony Feiling, M.B.Camb., L.R.C.P.; Nathan Mutch, M.B.Camb., L.R.C.P.; Robert Hunter Steen, M.D.Lond.; Francis Martin Rouse Walshe, M.D.Lond.

Licences Granted.

Licences to practise physic were granted to ninety-eight candidates who had passed the necessary examinations.

Diplomas in Public Health.

Diplomas in Public Health were granted jointly with the Royal College of Surgeons of England to the following:

F. J. Ayre, L.R.C.P., M.R.C.S., L.S.A., St. Mary's and Cardiff; H Balme, F.R.C.S.Eng., L.R.C.P., M.R.C.S., King's College; Jamasp Cursetji Bharucha (Lieut. I.M.S.), L.R.C.P., M.R.C.S., L.M. and S.Bombay, Bombay and King's College; * Elsie M. Chubb, M.D., B.S.Lond., Royal Free and University College; W. E. Cooke, M.B., Ch.B.L'pool., Liverpool; A. Ferguson, M.B., B.S.Lond., L.R.C.P., M.R.C.S., St. Bartholomew's; C. A. Gill (Capt. I.M.S.), L.R.C.P., M.R.C.S., University College; H. Hilliard, L.R.C.P., M.R.C.S., St. George's and University College; J. E. Hodgson (Major R.A.M.C.), L.R.C.P., M.R.C.S., Manchester and R.A.M. College; H. M. H. Melhuish (Capt I.M.S.), L.R.C.P., M.R.C.S., St. Bartholomew's and University College; A. L. Otway (Capt. R.A.M.C.), M.B., B.Ch., B.A.O.Dubl., Dublin and R.A.M. College; P. Rose, L.R.C.P.Lond., Guy's and University College.

* Under the Medical Act, 1876.

Communications.

The following communications were received: (1) From the Secretary of the Royal College of Surgeons of England, dated December 12th, 1912, and January 10th, 1913, reporting proceedings of the Council of that College on December 12th and January 9th respectively. (2) From the Clerk to the Privy Council, dated December 19th, 1912, enclosing a programme of the Fourth International Congress on Physio-Therapeutics to be held at Berlin from March 25th to March 30th next, and stating that should the College nominate a representative the Lord President of the Council would ask the Foreign Office to give him credentials as delegate of His Majesty's Government. Dr. A. E. Garrod was nominated as representative of the College. (3) From the Colonial Office, dated January 3rd, 1913, with enclosures, concerning the appointment of some distinguished medical man to represent His Majesty's Government at the tenth session of the Australasian Medical Congress, to be held at Auckland, N.Z., February 9th to February 14th, 1914. The matter was left in the hands of the officers of the College. (4) From the Home Office, dated December 20th, 1912, asking the opinion of the College on an application from the Liverpool Infirmary for Children for permission to use the prefix "Royal." A favourable reply was returned.

Appointment of Councillors.

Sir E. Cooper Perry, Dr. F. W. Andrewes, Dr. E. H. Starling, and Sir J. Rose Bradford were elected Councillors.

Representative on the Central Midwives Board.

Sir Francis Champneys was appointed the Representative of the College on the Central Midwives Board for one year from April 1st next.

Discussions on the Insurance Act.

Dr. F. J. Poynton brought before the College certain difficulties in the position of Fellows of the College who are hospital physicians due to the altered conditions that have arisen with the establishment of the medical panels. He said that these difficulties related to the hospitals and their honorary physicians, to the doctors on the panels and to the patients themselves. The main difficulty was the matter of determining which patients were suitable for hospital relief, and which for treatment by the doctors on the panel; there was some danger of patients being sent to and fro between the hospital and the doctor. It would often be onerous for the physician to outpatients to decide the question, and he was afraid the result would be that the hospital would be blamed whatever happened. He hoped the College would keep a sympathetic eye on the difficulties he had mentioned.

The President observed that the difficulties should be settled locally at the various hospitals. Two committees had already been appointed to consider the circumstances of the Insurance Act.

The Treasurer (Sir Dyce Duckworth) placed reliance on the lay management of the hospitals, and referred to the plan adopted at St. Bartholomew's Hospital.

Some further discussion took place, but no resolution was proposed.

Dr. H. Sainsbury, in accordance with notice, called attention to the medical working of the Insurance Act to the resolutions passed at a meeting of the Joint Committee on November 13th, 1912, and urged upon the College the necessity for a further consideration of the present situation with a view to further action. (These resolutions were published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of November 16th, 1912, p. 551.) Dr. Sainsbury urged that the majority of doctors were working the Act under compulsion, and labouring under a strong sense of injury; that the conditions were temporary and could be adjusted; and that in three months some further decision would have to be reached. He hoped that the resolutions passed by the College would not remain as mere pious opinions, but that they would be acted upon. The general practitioners were the backbone of the profession, and they had never stood in greater need of guidance than at present. On grounds of freedom of action and development of character, and on the grounds of the interest of the insured, he urged that the College should give the matter its continued attention. He moved the following resolution:

> That this College do summon a meeting of the Conjoint Committee at the earliest possible day to further consider the resolution passed on November 13th, 1912, and to report to the College.

This was seconded by Dr. F. J. Smith, who referred to the methods which had been adopted to force doctors to go on the panel, and trusted that the College would be roused to a sense of its responsibilities to the Licentiates. The resolution was carried.

Reports.

A report from the Committee of Management dated December 3rd, 1912, recommended that Radley College and King Edward VII School, Lytham, which had been visited by members of the Committee and reported on as fulfilling the requirements of the Board, be added to the list of institutions recognized by the Examining Board in England for instruction in chemistry and physics, and that the course of laboratory instruction in public health at the University of Cambridge be added to the laboratory courses recognized by the Royal Colleges for their diploma in public health.

The report was adopted.

After some further formal business the President dissolved the Comitia.

CONJOINT BOARD IN SCOTLAND.

THE following candidates passed the quarterly examinations held in Edinburgh which concluded on January 25th:

FIRST EXAMINATION.—Umanath Rao Hattiangadi, I. Davies, L. H. Peries, J. T. W. Gale; and four passed in Physics, three in Biology, and one in Chemistry.

SECOND EXAMINATION.—A. G. McKee, J. L. Hendry, P. Chisholm, A. G. Bee, C. E. S. Runciman, F. H. A Stegmann, R. V. Clarke, H. A. G. Dykes, J. Fitzpatrick, Elfrida H. B. Coghill, J. P. Fairley, J. H. Blackburn, H. R. Fisher; and three passed in Anatomy and one in Physiology.

THIRD EXAMINATION.—Florence W. Heyworth, S. A. Faulkner, J. Corcoran, Krishnarao Abbaji Deodhar, J. R. Fleming, E. C. Brooks, W. S. O'Loughlin, C. Popham, A. W. Cochrane; and two passed in Pathology, and five in Materia Medica.

FINAL EXAMINATION.—E. W. Ingle, W. Laird, Baljiapet Seshachalam, J. Williamson, P. Giuliani, Isabel Quanbrough, W. A. S. George, E. Clubomi-Beckley, T. Sheehan, J. E. Rees, H.W. Ward; and six passed in Medicine, two in Surgery, thirteen in Midwifery, and nine in Medical Jurisprudence and Public Health.

THE Royal Academy of Medicine, Turin, offers for competition the thirteenth Riberi prize, of the value of 20,000 francs. All who desire to submit scientific researches in medical science for competition are requested to announce their intention before December 31st, 1916. For information and forms of application competitors should apply to the Secretary of the Royal Academy of Medicine, 18 Via Po, Turin, Italy.

Obituary.

THE RIGHT HON. LORD ILKESTON, P.C., M.D., F.R.C.P., D.C.L., LL.D.,

CONSULTING PHYSICIAN, GENERAL HOSPITAL, BIRMINGHAM; EMERITUS PROFESSOR OF MEDICINE, QUEEN'S COLLEGE, BIRMINGHAM.

IT is with the deepest regret we have to announce the death of Lord Ilkeston, better known to the profession as Sir Walter Foster, which took place at his residence in Grosvenor Road, London, on January 31st. Some sixteen months ago Lord Ilkeston began to suffer from symptoms pointing to obstruction of the bowel, and at the beginning of October, 1911, lumbar colotomy was performed by Sir Anthony Bowlby. He bore the operation well and made a good recovery. He continued to follow with the keenest interest the shifting scenes of professional life during the last year. During the last month or two, however, it became more and more clear that he was failing, and he suffered a good deal of pain. Some weeks ago haemorrhage from the bowel took place, and although he rallied from the immediate effects of the loss of blood he gradually sank, facing the end which he knew to be inevitable, as he had borne his illness, with unruffled fortitude. When the disease, the true nature of which he had himself suspected from the beginning, was positively pronounced to be malignant, he heard the decision with perfect calmness. He sent for a friend to whom he conveyed the news as coolly as if he had been announcing that he was going out of town, and discussed the details of the operation and the chances of success in a manner which showed that he perfectly realized the situation, and was prepared for whatever fate had in store for him. He passed easily into conversation about other things—reminiscences of his professional life at Birmingham, the men he had known, his relations with Mr. Chamberlain, and so forth, showing all his old practical insight into affairs and his power of portraying a personality with one or two touches. The Greek philosopher discoursing with his friends before drinking the hemlock was not more free from any unmanly fear.

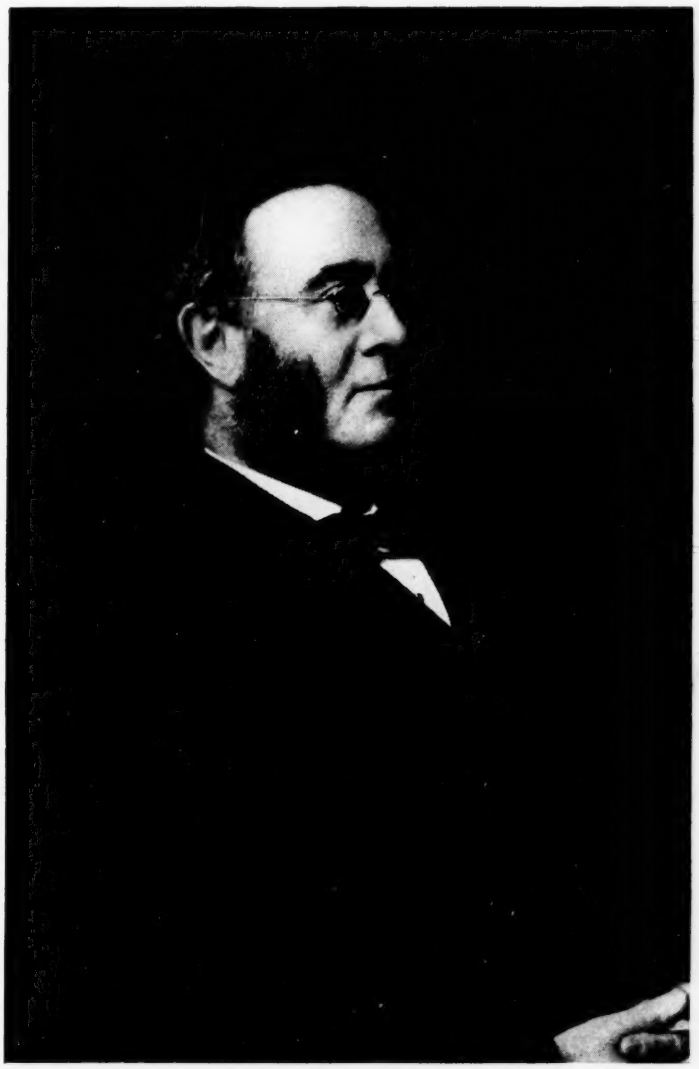
Balthazar Walter Foster was the son of Balthazar Foster of Beaulieu, Hampshire, and Marian Green of Cambridge. He was born in 1840, and was therefore in his seventy-third year when he died. He has so long been a conspicuous figure in the medical and political world that probably most people who did not know believed him to be older. It must be remembered that he entered on active professional life at an age when most students nowadays are struggling with their preliminary examinations. Till the onset of his last illness he was remarkably alert in his movements and bright in manner; even in appearance he did not seem his age.

At the age of 8 or 9 he went with his family to Ireland. He was educated at the Drogheda Grammar School, where he had a brilliant career, gaining at the age of 13 all the three medals, in classics, science, and English. His first intention was to enter the ministry, and before leaving school he read through the undergraduate course of theology. Changing his mind, however, he decided to enter the medical profession, and accordingly went up to Dublin in October, 1857. There he was a student at Trinity College and at the school of the Royal College of Surgeons. He was the best anatomist of his year, and was made prosector to the professor, John Hatch Power, whose junior colleague was Professor Alexander Macalister, now of Cambridge. Early in 1860 he obtained the licences of the Colleges of Physicians and Surgeons in Ireland. He obtained the degree of M.D. from the University of Erlangen in 1864, was admitted a member of the Royal College of Physicians of London in 1865, and was elected a Fellow in 1873.

As soon as he was qualified he applied, in answer to an advertisement, for the professorship of practical anatomy and the post of medical tutor at Queen's College, Birmingham. But owing to his youth he had so little hope of success that he was actually on his way to present himself for examination for a commission in the navy when he received a telegram announcing that he had received the Birmingham appointment. This changed his whole career. On his arrival to take up his duties he discovered that he was also to hold the post of assistant physician to Queen's Hospital. Therefore he was a hospital physician and a professor of anatomy before he had completed his 21st year. In 1864 he became full professor of anatomy in succession to Furneaux Jordan. In 1866 he left Queen's College to join the Sydenham College as professor of anatomy and medicine. Strong efforts were then being made to bring about an amalgamation of the two schools, and this was achieved in 1868, when the School of Medicine was reconstructed by Act of Parliament. In the meantime Foster had become full physician to the Queen's Hospital, an office which he retained till 1868, when he was appointed physician to the General Hospital. He was also appointed professor of medicine in conjunction with James Russell. That position he held from 1868 till 1890, when he became Emeritus Professor and consulting physician to the General Hospital. In addition to these appointments he was consulting physician to the Birmingham Hospital for Skin and Genito-Urinary Diseases, and to the Kidderminster Infirmary.

He acquired a large private practice as consulting physician, and published various writings on professional subjects. He gave special attention to diseases of the heart, and his best-known contribution to medical literature was a book on the sphygmograph which appeared in 1866. His interest in the heart is symbolized in the coat of arms designed for him when he was made a peer; a picture of this appeared in the JOURNAL of June 24th, 1910. Among his other publications are: *The Use of Ether and Etherized Cod-liver Oil in the Treatment of Phthisis* (1868); *Method and Medicine* (1870); *The Prince's Illness: Its Lessons—a Lecture on the Prevention of Disease* (1872); *The Therapeutics of Diabetes Mellitus* (1872); a collection of lectures and essays entitled *Clinical Medicine* (1874); *Comparative Mortality of Birmingham and other Large Towns* (1875); *Diabetic Coma, Acetonaemia* (1879). He was the author of the article on valvular disease of the heart in *Quain's Dictionary of Medicine;* and of papers on the treatment of pleuritic effusion (*Birmingham Medical Review*, 1881).

From an early part of his professional career he had been active in the work of the British Medical Association. He was elected co-secretary of the Birmingham Branch in 1872, and was one of the secretaries of the annual meeting held at Birmingham in the same year. He was Vice-President of the Section of Medicine at the annual meeting held at Bath in 1878. In 1883-4 he was President of the Branch, when he delivered an address on the political powerlessness of the medical profession, which did much to arouse doctors to a feeling that if ever they were to be a force with which the politicians had to reckon they must organize themselves into a united body. In 1884 he was elected President of the Council, an office in which he displayed great zeal for the better organization of the profession. During his term of office the Association took new premises in the Strand, and Foster interested himself in getting its head quarters made a freehold. In 1886 he was elected one of the first direct representatives of the profession on the General Medical Council, and for ten years, in conjunction with Dr. Glover and Mr. Wheelhouse, he fought the battle of reform against the apathy or active opposition of the Council. Of this fight he bore the brunt. Although the work was generally distasteful and too often thankless he struggled on, often beaten but never allowing defeat to dishearten him. By his tact, resourcefulness and quiet but resolute persistence he succeeded not only in gaining for the cause which he championed a hearing that could not have been won by violence, but in carrying many useful reforms. To his efforts the appointment of the Penal Cases Committee was largely due. He always laid the greatest stress on the importance of maintaining a high standard in medical qualification, and in particular he did good service by denouncing laxity in the conditions of granting diplomas in public health at that time. When his period of service came to an end in 1896 he did not seek re-election, but in the following year when a by-election unexpectedly occurred, he was induced to stand again, but he was not returned. Not long before, at the



W. Keaton

annual meeting, his services to the profession and those of his colleague, Mr. Wheelhouse, had been recognized by the award of the Gold Medal of the Association. He was —with the exception of Mr. Andrew Clark—the last survivor of those distinguished men on whom the Association has bestowed this signal honour.

He delivered the Address in Medicine at the annual meeting of the Association held in Birmingham in 1890, taking as his subject the public aspects of medicine. It was a remarkable address, the orator tracing the evolution of preventive medicine through the scientific work of the profession, and foretelling the advent of a day "when the State shall awaken to the value of such services, and recognize in the trusty dispenser of a nation's charity, or the wise saviour of a city's health, servants of the State more worthy of its honours than the successful soldier or the astute diplomatist." He was President of the Section of Public Medicine at the annual meeting held at Nottingham in 1892, and of the Section of State Medicine at the London meeting in 1910.

At a comparatively early period of his career Foster had begun to take an active part in public affairs outside the profession. He was elected to the Birmingham Town Council in 1885, and served on that body for five years. It was also in 1885 that he entered Parliament as member for Chester. When he sought re-election after the great split in the Liberal party in 1886 he was defeated by a narrow majority. In the same year he received the honour of knighthood in recognition, as Mr. Gladstone expressed it, not only of his medical eminence, but of his services to the great town of Birmingham and his political work. In 1887 he was returned for the Ilkeston Division of Derbyshire, which he continued to represent till 1910, when he gave up the seat, which he had won by an enormous majority, in favour of Colonel Seely, now Secretary of State for War, who had failed to secure re-election elsewhere.

In Parliament, while faithful to his political constituency, he never forgot that he was one of the representatives of the larger constituency of his professional brethren. He took a prominent part in the discussion of all questions affecting directly or indirectly the interests of medical practitioners. He rendered invaluable service in the passing of the amended Medical Act of 1886, and he was largely instrumental in obtaining direct representation of the profession on the General Medical Council. As the advocate of the redress of various grievances of medical officers he earned the gratitude of the Army Medical Department. His defence of the late Captain Fowler, the victim of one of the grossest acts of injustice ever perpetrated even by the War Office, was a fine instance of his courage in standing up against a Government at that time all powerful, which only escaped defeat by using the party machinery at full pressure. In connexion with the Public Health (Scotland) Bill, the Midwives Bill, and the Poor Law Officers' Superannuation Act, Foster showed sleepless vigilance in safeguarding the interests of medical practitioners.

He became Parliamentary Secretary to the Local Government Board in 1892. On his appointment to that office a dinner was given in his honour, which was attended by more than a hundred and fifty members of the profession from all parts of the kingdom. Among them were many of the leaders of the medical profession and the men prominent in the Association at that time. It was felt, as several speakers on the occasion said, that the appointment marked an important epoch and indicated a public recognition of the parliamentary work done by the Association for the furtherance of public health and the welfare of the State. In his speech Sir Walter Foster, as he then was, referred to the fact, mentioned by the President, Dr. Withers Moore, who was in the chair, that he had served in nearly every office of the Association, and in the discharge of these functions he had had his education for public life in the State. He added that as an officer of the Association he had learned some other arts. He had been for a long time a member of the State Medicine Committee, and in that capacity had learned something about the State medicine which it was then to be his lot to administer. "That Committee of State Medicine," he said, "was after all the nursing mother of sanitary science in this country, and helped to do much to place the law of public health in the position in which it stands to-day." He went on to say that he had also been a member of the Medical Reform Committee, and during the many struggles they had had for medical reform he had learned the arts of an agitator which might be useful.

He held the office of Parliamentary Secretary to the Local Government Board till 1895. In that capacity he proved himself a first-rate administrator, and did excellent work in periods of difficulty, notably in strengthening the system of defence against cholera in 1892 and again in 1894. Here, too, he lost no opportunity of improving the position of medical officers of health and parish doctors and increasing the influence of the profession. In 1893 he presided over the Select Committee on Death Certification, but the Ministry to which he belonged went out of office in 1895 before an opportunity of legislation on the lines recommended by the Committee occurred. To the disgrace of both parties nothing has yet been done to give effect to these recommendations, and both the report of the Committee over which Foster presided and that of the Coroners Committee, which reported much to the same effect in 1910, seem to have been consigned to the official pigeon-hole, the limbo of legislative stillbirths.

Foster's political career was very successful till the Liberal Party returned to power in 1905, when he was trodden down by hungry generations of younger aspirants for office. It was generally expected that he was to have been President of the Local Government Board. We believe that, as a matter of fact, he was to have been First Commissioner of Works, but was set aside to make room for Mr. Lewis Harcourt. He was offered the Deputy-Chairmanship of Committees, but declined that post as inadequate to his deserts. His constituency felt so much that his claims had been ignored, that it insisted on some recognition being given. As there was no opportunity of a post of suitable rank, he accepted a peerage in 1910, taking the title of Lord Ilkeston at the expressed wish of the constituency he had represented for twenty-three years. He had been a Privy Councillor since 1906.

Of his multifarious activities in other directions an idea may be formed from the following enumeration of public positions held by him at different times in addition to those that have been mentioned. He had held the office of President of the British Medical Benevolent Fund and was the first President of the Irish Medical Schools' and Graduates' Association. He was Chairman of the National Liberal Federation from 1886 to 1890, President of the Allotments and Small Holdings Association in 1892, and President of the Land Law Reform Association, 1899, 1908. He was a J.P. for the county of Warwick. In addition to the distinctions already mentioned, he received the honorary degree of D.C.L. from the University of Durham in 1893, and that of LL.D. from the University of Montreal in 1897. Ilkeston conferred upon him the freedom of the borough in 1904.

Lord Ilkeston married Emily, daughter of Mr. W. L. Sargent, of Edgbaston, and by her had one son, the Hon. Stephen Foster (now Lord Ilkeston), and three daughters, two of whom survive him. To his widow, who helped throughout his married life with encouragement and support, and who ministered to him with the most self-sacrificing devotion in his illness, the sympathy of the profession and of his many friends outside it will go out in her bereavement.

The funeral took place at Brookwood Cemetery on February 3rd. A memorial service held at St. Margaret's, Westminster, was attended by a number of friends, including Earl Spencer, Lord Shaw of Dunfermline, Lord Southwark, Lord Rotherham, Colonel Seely, M.P., Mr. John Burns, M.P., Mr. Eugene Wason, M.P., Sir Edward Coates, M.P., Sir Henry Cotton, Sir Herbert Raphael, M.P., Sir James Reid, Bart., Sir David Brynmor Jones, M.P., Sir Horace Monro, Secretary to the Local Government Board, and Sir R. Douglas Powell. The Royal College of Physicians was represented by Sir Thomas Barlow, Sir Dyce Duckworth, Dr. Sharkey, Dr. Percy Kidd, Dr. Samuel West, Dr. W. Hale White, Dr. Liveing, Dr. Ormerod (Registrar), and Mr. Fleming (Bedell); the British Medical Association was represented by Mr. E. B. Turner, Member of Council, who attended at the request of the President, and Mr. Guy Elliston, Financial Secretary. The Land Law Reform Association, the National Liberal Federation, the Ilkeston Division Unionists

Association, the Ilkeston Division Liberal Association, and the Women's Imperial Health Association were also represented.

The Right Hon. ROBERT FARQUHARSON, M.D., writes:

When Walter Foster deserted medicine for politics many of his friends, myself included, thought that he had made a mistake, for his position in the North was unassailed and unassailable. Not only had he the largest consulting practice, but he was a successful lecturer and clinical teacher; he had written largely and well on the heart and other important matters, and his professional income must have been very large. But he always had a love for public life, and was prepared to make sacrifices to embark in it. Chamberlain and he were great friends in earlier days; he enjoyed the intimate confidence of Schnadhorst, prince of organizers, and on one occasion, if I remember aright, he was president of the National Liberal Federation, the highest honour to which an outsider can aspire. So the road was plain and simple towards higher honours, and he moved along it with perfect success. At first he represented Chester, but when the *débâcle* came he was swept out of his seat and had to take refuge elsewhere, and Ilkeston opened its embracing arms and took him in and held him with unceasing and increasing devotion until he was called away to the "other place." He very quickly caught on in the House, for he spoke early but not too often, and he had a remarkably attractive House of Commons manner, which, like the bedside manner he must have possessed to perfection, is, I fancy, born, not made, though, of course, it may be partially acquired by practice. To this was added a rich and well modulated voice, through which ran a strain of the brogue which bespoke Hibernian readiness in debate and retort—a clear, balanced mind, which thought out his subject carefully and communicated his views in well-arranged and judicious language, neither too brief nor too copious, but satisfactory at the moment and standing the test of subsequent reflection. Like a wise man, although he occasionally took part in general discussion, he confined himself mostly to his own subjects, on which he became a recognized authority, and the House always filled up when he rose to speak of them. In 1894, when Sir Henry Fowler was President of the Local Government Board, he passed that wide-reaching and eminently successful piece of legislation, the Parish Councils Bill, and in the following letter he generously acknowledged the eminent services of Sir Walter Foster, then his chief lieutenant:

Local Government Board, 15th January, 1894.

My dear Foster,

I cannot let the passage of our bill be completed without conveying to you my cordial thanks for the valuable, unflinching, and pleasant assistance you have so ungrudgingly rendered to me in my arduous task. I know that on several points you would have preferred to see the provisions of the bill more in accordance with the views of several of our friends behind us, but you have so fairly recognized the difficulties of the Government, and the wisdom of obtaining substantial and unprecedented advantages, and you have so loyally discharged your duty as a member of the Government, that it would be the height of ingratitude if I did not express my appreciation of your conduct, etc., etc.[1]

When the next Liberal Government was framed it was inevitable that a place should be found for him, and the Local Government Board was ideally fitted to bring out his best powers. I think he was the first medical man who held parliamentary office under it, and the wisdom of the choice was quickly shown, for both in and out of the House he was emphatically the right man in the right place, and spoke on vaccination and vivisection and all matters concerning public health with a convincing authority which was recognized and appreciated. When the Tories succeeded the Liberals and we were in the throes of the disastrous South African war, Sir Walter patriotically placed his services at the disposal of the Government to go out and bring order out of chaos and try to save the numerous valuable lives which were being preventably sacrificed by want of sanitary co-ordination. But with the infatuated obstinacy which regulated the proceedings at head quarters during that dark and dreary time, his valuable aid was rejected, and history now tells the mournful tale of what might have been. When the next Liberal Government was framed Sir Walter and his friends were disappointed to find that no place had been found for him. Doubtless there were difficulties in the way—a Cabinet portfolio had to be found for John Burns, and Sir Walter as a senior man could not serve under him at the Local Government Board. But he accepted the situation loyally, and manfully continued to do his useful work as a private member, and when translated to what has been sometimes called the lethal chamber he determined that he would stir up the stagnant waters and introduce fresh life into the gilded chamber, which only requires to be wakened up to impress its mass of sterling ability on the minds of the people. He moved or seconded the Address with marked ability, and was beginning to feel his feet and stand firmly on them when the blow fell. And it was with regretful surprise that we heard of his serious illness, for he was a surprisingly young-looking man for his age, with abundant hair barely flecked with grey, a buoyant mind and walk, and all the appearance of a constitution that would long defy the ravages of time. But here, again, his abounding vitality and elastic nature and Christian resignation came to his aid. When I went to see him not long after the operation and asked how he was, he characteristically replied, "As well as a man can be who has got a hole in his side," and I consoled him by reference to the case of a mutual friend, high placed officially, who led an active life, even hunting occasionally, after a colotomy which was still kept open; and he confidently looked forward to regaining his seat in the House of Lords and joining occasionally in debate. But it was not to be. Gradually the shadows grew deeper around, and although brightened by an occasional gleam of hopeful sunshine, as when radium seemed to cause some arrest of the advancing disease, they closed in upon him at last, and the end came; and perhaps, under the circumstances, we cannot regret that the curtain fell. It would be unthinkable to imagine bright, breezy, active, likeable Walter Foster as a chronic invalid, incapacitated by bodily and perhaps mental infirmity from taking part in the *Sturm und Drang* of forceful political life, where he worked so long and so well. The drama of his strenuous and useful career is over, and nothing is left us but to render our true and respectful sympathy to his devoted wife, who shared his joys and his sorrows, exulted at the mark which her lost husband made in two great and essential departments of human activity, and brightened his later hours by her energetic cheerfulness; and I think she may be consoled for her heavy loss by the reflection that his work has not been in vain—that he has alleviated human suffering and lengthened human life, and that he leaves behind him the high and inspiring example of how a good man can live and how he can die.

Professor SAUNDBY writes:

My recollections of the late Lord Ilkeston carry me back a great many years. When I came to Birmingham in 1876, although he was under 40, he was already one of the leading consulting physicians in the city and district, and held the position of physician to the General Hospital, and of Professor of Medicine in Queen's College Medical School. He impressed me at the time as being a man not only of remarkable ability but far ahead of his local contemporaries in knowledge of recent scientific medicine. He had already published a number of important papers, which had carried his name far and wide, his pioneer work with the cardiograph being of considerable originality. I have often heard his "bedside manner" spoken of as being perfect, and unquestionably he had a large practice in bedside consultations, his carriage being constantly seen all over the city. When I came upon the Council of the British Medical Association, he was its President as the title then was, and there never was a better chairman; for many years we used to look back to those days as affording a model to all times of the orderly dispatch of business. The Council used to meet in Exeter Hall, which was a long, narrow room, in which it was difficult for those who sat at the lower end to make themselves heard, or to take any proper share in the proceedings; the duties of the chair were not lightened by these circumstances, and it says much for him that so many should have carried away so strong

[1] *Life of Lord Wolverhampton*, p. 272.

an impression of his merits. After he entered Parliament, in the early eighties, he necessarily had to give up a good deal of practice, and his life thenceforth was devoted in a much greater extent to the public. His monument must be the Medical Act of 1886, which he carried successfully through Parliament; it will always be remembered as enfranchising the medical profession and widening the General Medical Council by making it no longer almost exclusively representative of the licensing bodies. Quite appropriately Sir Walter Foster, as he then was, became one of the first group of direct representatives of the medical profession in the Council, a post he held until 1896, and there can be no question that the choice of a man of his ability and position as one of the first direct representatives gave these new members a standing in the Council which they might otherwise have taken years to attain. There is no need to recall the incidents of his rejection at the 1896 election, but after that time he was no longer in a position to represent the medical profession. He had given up his posts in Birmingham and had removed to live in London. Except for the short period from 1892-5, when he was Parliamentary Secretary of the Local Government Board in Mr. Gladstone's last administration, his career was that of a member of Parliament sitting in opposition. On the return of his party to power many hoped that the medical profession would be recognized by his appointment to the Presidency of the Local Government Board, but that was not to be, and the Government was the weaker for his exclusion. It is impossible to doubt that had Lord Ilkeston been taken into the confidence of the Chancellor of the Exchequer many of the mistakes of the Insurance Act would have been avoided.

J. F. J. SYKES, M.D., D.Sc.,

MEDICAL OFFICER OF HEALTH, ST. PANCRAS.

THE announcement of the death, on January 30th, of Dr. J. F. J. Sykes, from peritonitis after an operation, has come as a shock to many friends who knew his ceaseless activity in the office which he held.

John Frederick Joseph Sykes was born at Brighton sixty years ago, and was educated in that town, at Guy's Hospital, and at the University of Edinburgh. He took the degree of M.D.Edin. in 1878, and the diplomas of L.R.C.P.Lond. and M.R.C.S.Eng. in the same year. He studied also in Paris and Frankfort. He graduated B.Sc.Edin. in 1880, and took the degree of D.Sc. in Public Health in the same university in 1893. From an early stage of his career he devoted himself to public health work, and for some years was assistant examiner in hygiene to the Science and Art Department. The chief work of his life was done as Medical Officer of Health of St. Pancras, an appointment which he received in 1885. He gave himself to the duties of this arduous office with zeal; and very much of the more general work which he accomplished was, as it were, a by-product of his special duties. He early directed attention to the insufficient control with respect to the burial and identification of deceased persons and the verification and certification of deaths, and gave evidence before the Select Committee on this subject which sat in 1893 under the chairmanship of Lord Ilkeston (then Sir Walter Foster), whose death we have also the regret to record in this issue. Dr. Sykes interested himself in 1889 in the question of the provision of hospital accommodation for diphtheria in the metropolis. In 1895 he drew attention to the risk of the spread of puerperal fever by midwives, and in the same year gave evidence on the spread of disease in barrack schools before the Poor Law Schools Committee. To complete this brief note on his work with regard to infectious diseases it may be said that in 1901 he took the lead in obtaining the provision for the notification of chicken-pox during the prevalence of small-pox. He was President of the Society of Medical Officers of Health, and had previously been President of its metropolitan branch. He took great interest in the work of the Royal Sanitary Institute; was a member of its council almost continuously from 1883, and at various times served on the Congress, Examination, Referee, Education, Museum, Finance, and Parliamentary Committees. He was the Chairman of the Congress Committee from 1892 to 1897, and was honorary or recording secretary of one of the sections of the congresses of the Institute from 1884 to 1904. He was a Fellow of the Royal Statistical Society, and was by that society awarded the Howard Medal in 1900. In 1901 he gave the Milroy Lectures before the Royal College of Physicians of London on public health and housing. He was the author of a work on *Public Health Problems* in the Contemporary Science Series, and wrote a handbook of *Home Hygiene* for the St. John Ambulance Association. He was Secretary of the Section of Architecture in relation to hygiene at the International Congress of Hygiene and Demography in London in 1891, and was a delegate to the next following congress held at Budapest in 1894. He was a member of the Epidemiological Society, of the Société Française d'Hygiène, of the Société d'Hygiène Publique of Paris, and of the Deutsche Verein für öffentliche Gesundheitspflege.

Dr. ARTHUR NEWSHOLME, Medical Officer to the Local Government Board in England, writes:

Although in the time available I cannot hope to do justice to Dr. Sykes's memory, I avail myself of your invitation to add my personal tribute to the high value of his life and his work.

The outstanding characteristic of Dr. Sykes was the extremely and sometimes almost painfully thorough fashion in which he dealt with every problem with which he was faced. While current it formed the subject of his constant thought, it was investigated from every viewpoint, and the results of his work were presented with conscientious completeness. To the superficial reader or hearer he may sometimes have appeared unnecessarily to labour one or other point of detail, but this was the defect of the quality of thoroughness which gave importance to his opinions and his conclusions. He had an original mind, exceptionally fitted for analysing public health problems; and had not his time been over-full of and his energies sapped by the vast mass of minor administrative detail daily requiring his attention, his contributions to the advance of our knowledge would have been more numerous even than they were. Notwithstanding the clog of excessive administrative work, he impressed the mark of his mind on several important subjects. His work on *Public Health Problems* did not, I believe, have the circulation it deserved; but it well repays study, even at the present time, nearly every chapter embodying broad-minded and original suggestions on the wide aspects of public health problems. The book on *Housing and Public Health*, giving the substance of his Milroy Lectures on this subject, contains some of his most thoughtful work; and the chapters on "Construction and Misconstruction" and on "Usage and Misusage" should not be neglected by any medical officer of health to whom urban housing is a pressing problem. Dr. Sykes was the pioneer of the school for mothers in this country, and in inaugurating this work he not only realized fully the importance of the educational element in the hygiene of infancy and childhood, but also the great value which attaches to the yoking of voluntary with official efforts directed against excessive child mortality.

But my chief wish in writing these lines is to add my tribute of grateful appreciation of Dr. Sykes's life and work. His memory is among the precious possessions of his friends, and public health is the poorer because of his —as it appears to us—too early rest from work.

Dr. R. M. BEATON (Chairman of the St. Pancras and Islington Division of the British Medical Association) writes:

Quite recently Dr. Sykes was in our midst, going out and in and doing his duty—then a sudden attack, an operation, and in a week he is gone. The suddenness startled those of us who heard of his illness and of his passing in quick succession, and even now we can hardly believe that the alert, active presence which has so long and so well watched over the health affairs of St. Pancras is gone from us. It was in his capacity as medical officer of health that I knew him best, especially during the last ten years. For the greater part of this period I was associated with him as a member or Chairman of the Public Health Committee of St. Pancras. I found him a most devoted officer, courageous in the exposition of his views, and fearless in the carrying out of his duty. He was a

man of many ideas, some of which possessed him, and when this was the case he never spared any effort to make himself complete master of the particular subject. Nothing gave him greater delight than to expound his favourite views to an individual or a committee, and he would do this with an elaboration of detail which often amazed and sometimes puzzled his hearers. I was frequently struck with the original lines of thought and argument by which he would seek to prove any case he expounded, as well as by the earnestness of his manner and ring of conviction in his voice. United to his fondness for detail he had a wide outlook and took a long view of things. Often his ideas were rejected, but he laboured on with much enthusiasm and great hopefulness. He has left his mark for good on St. Pancras. Now he rests from his labours and his works do follow him.

CHARLES ORTON, M.D.DURH., F.R.C.P.EDIN.,

CONSULTING PHYSICIAN, NORTH STAFFORDSHIRE INFIRMARY.

THE announcement of the death on January 16th of Dr. Charles Orton, consulting physician to the North Staffordshire Infirmary, at the age of 73, has caused much regret throughout the profession in the Pottery districts. He received his medical education at King's College, London, and Edinburgh, became M.R.C.S.Eng., and L.S.A. in 1862, and F.R.C.P.Edin. in 1881, taking the degree of M.D.Durh. in the same year.

He was one of the old pupils of the old North Staffordshire Infirmary at Etruria, and was house-surgeon there in 1862. After commencing practice at Newcastle-under-Lyme, he was appointed one of the honorary medical officers of the infirmary, an appointment which he retained until 1889, when he became consulting physician. He took part in the formation of the Staffordshire Branch of the British Medical Association in 1874, was its president in 1883–4, and from 1882 to 1888 one of its representatives on the old Parliamentary Bills Committee. His address as president of the Branch was on the effects of our present system of education on the health of our children. He was surgeon to the 4th Battalion of the North Staffordshire Regiment (Prince of Wales's), and retired with the rank of surgeon-major.

In 1870 he visited the seat of the Franco-Prussian war with Mr. W. D. Spanton, when they wrote an account of their experiences; he also wrote an essay on the medical wants of the Potteries. He had a wide practice in and around Newcastle-under-Lyme until he retired, for he was highly esteemed as an able practitioner and man of culture, qualities which, combined with his kindness and hospitable disposition, won him the universal respect and esteem of his professional brethren. When he gave up practice, he spent some time abroad, chiefly at Florence and Rome, and then settled in Hastings, but a few years ago removed to Bradley Court, Wotton-under-Edge, a delightful old manor house, with an interesting history. Here he died after a very short illness, leaving a widow and three daughters, one of whom is the wife of Mr. Douglas Coghill, formerly M.P. for Stoke, and another is married to Mr. W. B. Yarde, formerly one of H.M. Inspectors of Education. He was buried at Wotton-under-Edge.

Mr. W. D. SPANTON sends us the following appreciation of his friend's life and character:

I am glad to have the opportunity of saying a few words concerning my old friend Charles Orton. It has been my pleasure to have had an unbroken friendship with the late Dr. Orton for more than half a century; and, during the many changes we have both taken part in, nothing has ever disturbed it.

Dr. Orton married Miss Kate Leslie, of Aberdeen, forty-seven years ago, and they had a family of three daughters, all of whom are now living. His brother Dr. John Orton was a surgeon-major in the Indian army, and died several years ago.

Dr. Orton was a proficient artist, and had some skill in sculpture, while he was especially fond of outdoor sports of all kinds, cricket particularly; and in later life whilst resident in Rome took an active part in the work of the Archaeological Society there.

We were long associated on the active staff of the North Staffordshire Infirmary, and he was always ready to take energetic action in any matter which conduced to its welfare and efficiency. He never wrote much or took a prominent part in public medical matters, but he could always be relied on to come forward to help a colleague or do anything to uphold the best traditions of our profession, for he was trained in the old school of masters and apprentices, as I was, and believed more in levelling up than the more modern style of levelling down. His pleasant manner, his perfect uprightness, and his loyalty to his chosen profession as well as to his friends are the most marked characteristics I can recall; and although for many years he had passed out of the region of active work, except sometimes in Italy in the winter, he will be greatly missed by all his old friends.

JOSEPH BAYLEY, M.R.C.S., L.S.A.,

MEDICAL SUPERINTENDENT AT ST. ANDREW'S HOSPITAL, NORTHAMPTON.

WE deeply regret to record the death of Dr. Joseph Bayley, which occurred at Bryn-y-Neuadd, Llanfairfechan, on January 19th.

Dr. Bayley, who was in his 78th year, had been ill for some eleven weeks; on November 2nd he went to Llanfairfechan to pay one of his periodical visits to the Welsh branch of the institution, and was taken ill whilst staying there. His death removes one of the most highly respected residents of Northampton, a man of conspicuous ability in his profession, and an exceptionally successful organizer. His life-work was bound up with the institution with which he was so honourably associated for forty-eight years in Northampton.

Joseph Bayley was born on January 17th, 1836, and was the son of Dr. Joseph Bayley, of Odiham, Hampshire. He was educated at Reading School, and proceeded to King's College, London, where he completed his education. He took the diploma of M.R.C.S. in 1857, and that of L.S.A. in 1858. He entered the Royal Navy as a surgeon, and on the outbreak of the Crimean war gallantly responded to the call for volunteers. He served with the Baltic Fleet on board H.M.S. *Colossus*, one of the first-class line of battleships during the Crimean war, and was present at the bombardment of Bomarsund, and at Kronstadt. For his services he received the Baltic medal. At the conclusion of hostilities he was appointed surgeon on H.M.S. *Shannon*, a vessel of the frigate order. He did not continue long in Her Majesty's Service, resigning his commission to enter the Lunacy Service. He was first appointed assistant medical officer at Leicester County Asylum. He afterwards became assistant medical officer at the Salop and Montgomery Asylum, Shrewsbury, under Dr. Oliver, whose daughter he married. On the death of Dr. Oliver he was appointed superintendent of the Shrewsbury Asylum, and in 1865 he was appointed medical superintendent at St. Andrew's Hospital, Northampton. Here for close on half a century he devoted himself to the welfare of the institution which under his skilful administration became one of the leading asylums of its kind in the country. In the management of the hospital itself no less than in the treatment of patients he was most successful, and St. Andrew's became recognized as one of the largest and best places for the treatment of patients of the upper and middle classes.

When Dr. Bayley went to Northampton the asylum possessed about 100 acres of land; St. Andrew's Hospital now has, including the Welsh Estates, over 1,000 acres. The buildings themselves have been enlarged time and again, new houses and blocks of buildings being added, private residences in the vicinity acquired, and, in fact, the whole hospital has been so completely remodelled that it now possesses hardly a feature in common with the institution of half a century ago. The average number of private patients admitted annually has risen from 20 to about 100, and the total number of inmates is now about 450.

In the care of the patients Dr. Bayley always laid special emphasis on the importance of pleasant surroundings and recreations. The grounds at St. Andrew's are beautifully laid out with terraces, avenues of fine trees, picturesque walks and groves, and broad meadows and lawns. Some twelve or thirteen years ago hockey, tennis, cricket, and croquet lawns were laid down. Bryn-y-Neuadd was acquired in 1900. The patients were

encouraged to participate in outdoor athletic games, and the effect was very marked. Dr. Bayley himself was interested in all forms of sport. He used to run his own pack of harriers at Northampton, and he also went in for coursing, owning some fine greyhounds. He was also a cricketer in his younger days. His interests, however, apart from athletics and sport, were mostly confined to the development of St. Andrew's Hospital.

Dr. Bayley was an actor in amateur theatricals in his youth, and many admirable performances were given by members of the staff and patients, even operas of the calibre of *Il Trovatore* being undertaken.

His work—and the continual development going on over a long period of years—proves him to have been a shrewd, capable, far-seeing man, possessing exceptional grasp and well-directed outlook, a man of large organizing power and practical enterprise, and a good judge of other men. Clear of perception and of ready decision, he may have seemed sometimes a little quick-tempered; but at heart he was one of the best of men, and friends and officials who survive him can alike testify gratefully to many acts of kindness and consideration.

An old friend and professional colleague writes: Now that Dr. Bayley's lamented death has terminated a long and much-valued friendship, I cannot refrain from giving expression to the feelings of admiration which I have always entertained for his attainments as a physician and his skill in that branch of the profession which he had adopted and for so long practised. In the ranks of the alienists his death creates a distinct loss which it will be difficult to fill, for it was to the eminent position he occupied and which was so widely recognized, that the success of St. Andrew's as a hospital for the care and treatment of the mentally afflicted was due more even than to the unusual talent for organization which he undoubtedly possessed, and to the watchful care which he gave to the working of the institution which he may be said to have created. St. Andrew's before his time was a struggling institution with scarcely any but local connexion. It is now the favoured resort to which patients from all parts of the kingdom, of all degrees, are sent—a tribute indeed to the skill of the superintendent and to the widespread nature of his reputation. It has happily been Dr. Bayley's lot to complete the work to which he had devoted his lifetime, and to put the hospital into so finished a state that it may reasonably be expected to maintain in the future the position it has now long held as one of the best and most useful institutions of its kind in the United Kingdom. As a man and as a physician his kindness of heart was at all times manifested, and his anxious care for the well-being, and if possible the cure, of those committed to his charge was a marked feature in his relations with their relatives and friends, and added no little to the favour with which the hospital is regarded. Dr. Bayley was a man of great determination, and having once made up his mind as to the right course to pursue, was not to be turned aside from his purpose. In his early days at St. Andrew's he had to meet many difficulties, but he did not give way, but by tact and firmness overcame them.

This is scarcely the place to speak of Dr. Bayley in his private relations—they were most happy; he made many friends, who now feel how great is their loss, and no enemies; while the former live his many amiable qualities will not be forgotten.

THE LATE DR. GIBSON.—The University Court of the University of St. Andrews, at a meeting on February 1st, adopted the following minute:

The University Court deeply regret the death of their former colleague, George Alexander Gibson, M.D., LL.D., etc., Edinburgh. They desire to put on record their sense of the great loss caused thereby to science, medicine, and Scottish culture. They recognize how great was his distinction as a physician, an original investigator, and a learned and accomplished writer on many branches of medicine.

They recall with thankfulness his valuable services as member of University Court, and the constant kindness, courage, and courtesy which he showed in all the relations of life. They grieve over the bereavement of his widow and family, and direct that a copy of this minute be sent to them as an expression of sympathy.

DR. JAMES WATERSTON, J.P., of Sunderland, died on the morning of January 22nd, having reached the advanced age of 85. He was a man of remarkably strong physique and followed his profession up to within a few weeks of his death, although he had been ailing for some time. A native of Edinburgh, he was educated at Heriot's Hospital, and took the diploma of L.R.C.S. in 1848. He commenced his professional career as medical officer to a vessel on a voyage to the Arctic region; it was shipwrecked, and he was with difficulty rescued. He practised for a time in Haltwhistle, and was later on in Gateshead during the period of the great cholera epidemic. Then he settled at Sunderland and practised there for more than half a century. He was connected with the Royal Infirmary for many years. Dr. Waterston was Chairman of the Sunderland Division of the British Medical Association in 1905. Twenty years ago he was appointed a Justice of the Peace, and attended most assiduously to work on the Bench. He always declined to become a candidate for municipal honours. He was a staunch Liberal in politics and a member of the committee of the Liberal Club. Dr. Waterston was twice married, and leaves one son and two daughters.

DEPUTY INSPECTOR-GENERAL ANTHONY GORHAM, R.N., died at his residence, Glen Ierne, Clifden, Ireland, on January 26th. He took the degree of M.D. of the Queen's University, Ireland, in 1866, and entered the navy in the following year. He received a decoration and special promotion to the rank of Staff Surgeon for his services in Perak in 1876, and after serving in nearly all quarters of the empire, including China, India, Mediterranean, and the various home stations, he retired in 1900 with the rank of Deputy Inspector-General of Hospitals and Fleets, having declined the offer of further promotion in the service. The deceased officer, who was not married, was one of a numerous family of doctors, two of whom, Dr. P. C. Gorham, of Clifden, and Dr. J. J. Gorham, J.P., of London, attended his funeral on January 30th. A younger brother, Dr. John Gorham, died a short time ago in South Africa.

A GLOOM was cast over the Edinburgh School of Medicine for Women at the close of the past week by the sudden death of Miss AGNES ROTHE, a young Danish lady who had taken some of her medical classes in Glasgow, and was completing her course in Edinburgh. The death occurred with startling suddenness at an early hour on Saturday morning. Miss Rothe had been quite well on the previous day; indeed, she had been present at the meeting of the Women Students' Medical Society on Friday evening, and had been in good health and spirits then; about 3 o'clock on Saturday morning she awoke with severe haematemesis, and in a few minutes thereafter she passed away. She was living in the Muir Hall of Residence in George Square, and she was able to summon one of her comrades to her assistance; but, as has been said, the fatal issue was almost immediate.

Medical News.

THE anniversary dinner of the Medical Society of London will be held at the Whitehall Rooms, Hotel Metropole, on Wednesday, March 5th, at 7.30 p.m.

THE annual meeting of subscribers to the Royal Medical Benevolent Fund will be held at 15, Wimpole Street, W., on Tuesday, February 18th, at 4.30 p.m.

WE are asked to state that any old student of Charing Cross Hospital who wishes to attend the annual dance at the Royal Palace Hotel, Kensington, on February 13th, should communicate with the honorary secretaries at the hospital.

A "MASQUE of Learning, Mediaeval and Modern, being a Pageant of Education through the Ages," devised by Professor Patrick Geddes, will be presented in the Great Hall of the University of London on March 11th and the following evenings of that week, as well as on Saturday afternoon, March 15th.

SIR SQUIRE BANCROFT will give a farewell "reading" of Dickens's *Christmas Carol* on the afternoon of Tuesday, March 11th, at the St. James's Theatre. Sir Squire Bancroft's first public reading was in aid of the Middlesex

Hospital, and the final reading will be given for the same great charity, on the weekly board of which he has served for twenty-five years.

A COURSE of lectures and demonstrations arranged by the Child Study Society will be held during February, March, April, and May at the house of the Royal Sanitary Institute, 90, Buckingham Palace Road, S.W. The first lecture will be given on Thursday, February 13th, at 7.30 p.m., when Dr. James Kerr will speak on brain mechanisms and handwriting. The chair on this occasion will be taken by Sir James Crichton-Browne.

A TABLET with the following inscription has been fixed over the "Coronation Aerial Post Bed" in the King Edward VII Hospital, Windsor: "This bed was endowed by a donation from the fund realized in aid of charities by the 'Coronation First United Kingdom Aerial Post, A.D. 1911,' organized by Mr. D. Lewis-Poole and Captain Windham, by sanction of His Majesty's Postmaster-General, for the conveyance of mails by aeroplane from London to Windsor, and from Windsor to London, in September, 1911, to commemorate the Coronation of Their Majesties King George V and Queen Mary."

THE next Special Post-graduate Course on the diagnosis and treatment of pulmonary tuberculosis at the Brompton Hospital will commence on March 3rd, and will continue for a fortnight. Each morning there will be demonstrations and practical work in the laboratory, and each afternoon there will be clinical demonstrations in the general and special out-patient departments, and in the wards. In connexion with the course a series of public lectures will be given at 4.30 p.m., and on Friday, March 14th, there will be an expedition to the Frimley Sanatorium. The syllabus of the course, the list of lecturers, and other particulars may be obtained on application to the Dean at the hospital.

THE Scottish Red Cross unit, which was stationed at Uskub during its period of service, returned to Glasgow on January 28th, after an absence of eleven weeks. The unit consisted of eighteen members, under the command of Major H. E. M. Douglas, V.C., D.S.O., R.A.M.C. On arrival at Uskub the Welsh unit was joined with it, and they were given a disused Turkish hospital; 137 beds were made, and 637 patients were treated, many being enteric cases. One member of the Welsh unit died of enteric fever, but the Scottish unit was fortunate in having no casualties. The medical officers with the Scottish unit were Dr. H. C. R. Rankin and Dr. C. Stewart Black. Several medical students were among the orderlies.

THE Obstetrical and Gynaecological Section of the Royal Society of Medicine has arranged to hold a discussion on "ventrifixation" of the uterus on Thursday, March 6th, at the Society's rooms, 1, Wimpole Street. The subject will be divided into three parts: (*a*) Indications for the operation, to be opened by Dr. W. S. A. Griffith; (*b*) varying technique of the operation, to be opened by Dr. Henry Briggs, Liverpool; and (*c*) clinical results of the operation, to be opened by Dr. A. E. Giles. It is requested that any one desiring to take part in the discussion will communicate with the honorary secretaries, Dr. Walter Tate, 32, Queen Anne Street, W., or Dr. T. Watts Eden, 26, Queen Anne Street, W., not later than Saturday, March 1st.

A SERIES of reports on blackwater fever in the Tropical African Dependencies, recently presented to Parliament, gives a general idea of the prevalence of the disease. It is interesting to note that in Northern Nigeria, out of eight cases in which details were obtained, all, with one exception, had been living in native-built houses. Of four other cases in which details were not supplied, three lived in native houses and one died in a canoe on the Gongola river. Native houses for Europeans, it is stated, have mud walls, but the floors are usually cemented; the wood used in building is the ordinary forest timber, unseasoned; the roofs are made with bamboo or the midribs of the palm, and roofed with the usual grass thatch. There is no reason to suppose that the usual blood-sucking flies are more attracted to these houses than to the ordinary bungalow, but they are more liable to the ravages of the white ant, common throughout the country. This question of the native house seems an important one and should be further inquired into. The idea now seems to be gaining ground that those who do not take the daily dose of 5 grains of quinine are more liable to blackwater fever than those who do, the conclusion being that blackwater fever is a manifestation of malarial toxicity. Recently much work has been done as to the etiology of this interesting disease, and Colonial reports such as the above should prove valuable, especially from the epidemiological point of view.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisments, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

COUNTRY DOCTOR asks for advice in the treatment other than operative of a case of enlarged thyroid in a girl aged 18. The enlargement is increasing in spite of thyroid extract and external remedies; there are no other symptoms.

HORNY SCAR.

M. desires suggestions for the treatment of a large scar of upper arm, contracted after a burn in infancy, which has for a few years taken on a horny character. Patient is a female over 40 years old, and her arm is contracted into a flexed position. The horn is heaped up at one part to a thickness of ¾ in., and a certain amount might be removed mechanically. Other parts are divided up, showing tender cracks in the skin. In other places the scar is studded with small horns as the sole of a boot is with nails.

ANSWERS.

PORTABLE TYPEWRITERS.

A SURGICAL correspondent writes in reply to a recent question on the subject to recommend the Corona, made by the Folding Standard Company, U.S.A. The price is ten guineas. In its case (which looks like a small dressing case) it measures 11 by 9¼ by 4½ in. and weighs 8½ lb. Its working is delightfully easy. It is truly portable, for it can be used without removing it from the case; when that is open, and the paper carrier turned back, it is ready for work. I frequently write with it when sitting in an armchair with the machine on my knees. After this eulogy I had better add I know nothing of either makers or sellers of the machine.

LETTERS, NOTES, ETC.

CORRECTIONS.

IN the paragraph on foul breath, in the JOURNAL of February 1st (p. 264, line 13 of paragraph), the words "offensive breathing" should read "oppressive breathing."

A misprint occurred also in Dr. Clippingdale's note on a royal hoax, which appeared in the same issue of the JOURNAL (p. 264, col. 2). The authority on which the note is based was Lady Llanover.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
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An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

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NOTE.—It is against the rules of the Post Office to receive *postes restante* letters addressed either in initials or numbers.